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DIGITAL TRANSFORMATION IN TÜRKİYE AND COMPARISON WITH THE EU

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Digital transformation is the integration of digital technology into all areas of an institution or business, fundamentally changing the way it operates and delivers value to people to improve existing products and services, to deliver new ones and to make the processes more efficient.[1] Technology is at the centre of digital transformation and without technology digital transformation is not possible. At this point data also enters in the picture since technology's ability to rapidly collect, generate, analyse and transmit data is the principal driver of digital transformation. Recently, because of the disruption caused by the COVID-19 pandemic to all aspects of life within the economy and society, the use of digital solutions has increased over the course of the pandemic.

Digital Transformation in Türkiye

In recent years, Türkiye has emerged as a dynamic player in the digital transformation area, undergoing a profound change across various sectors. With its strategic location at the crossroads of Europe and Asia, Türkiye is harnessing the power of technology to reshape industries, enhance public services and drive innovation. As the digitalisation wave sweeps through Türkiye, it is not only revolutionising the way businesses operate but also redefining the everyday life of the citizens.

Türkiye realises that the future is in digital transformation and has plans to achieve this goal in different areas. Therefore, established the Digital Transformation Office in 2018. Türkiye's Digital Transformation Office has divided this topic into five subtopics: Digital Transformation, Digital Türkiye, Artificial Intelligence, Big Data and Cyber Security.

Digital Transformation

In order to thrive as a competitive entity in the economy in the future, an agile governance approach that adeptly interprets prevailing circumstances and promptly implements decisions, coupled with the ability to generate innovative technological solutions, becomes imperative. Presently, in alignment with the burgeoning possibilities offered by rapidly evolving information and communication technologies and dynamic social requirements, a comprehensive transformation that harmonises human, business processes, and technological components emerges as a pressing need.

Digital transformation, which includes many technologies such as the Internet of Things, cloud computing, blockchain, big data and artificial intelligence, with the human mind at the top, brings radical changes in business processes and social life.

[1] The Enterprisers Project, "What is Digital Transformation", https://enterprisersproject.com/what-is-digital-transformation, Access Date: 21.08.2023

In this context, information society and Digital Türkiye (e-Government) policies have transformed into global-scale digital transformation reform efforts over time;

- New professions and business areas emerge with innovative technologies,
- It directs the world economy with its data economy,
- It makes life easier with human-centred artificial intelligence,
- It adds a new dimension to cyber security and defence fields,
- It realises a more transparent, accountable and participatory governance structure.

Data is at the centre of this transformation, which brings with it a new economic model and way of life. To be able to talk about a data-driven digital economy, it is first necessary to arrange the infrastructure to meet modern needs and to ensure that everyone in society has access to technology.[2]

In this context;

- To create infrastructures that will enable the use of these technologies as well as producing domestic and national innovative technologies,
- Interpretation of the data transmitted over this infrastructure within our own limits,
- Planning the business processes needed for the transition from big data interpreted with artificial intelligence to value economy,
- Undertaking activities in many areas, from ensuring security within the cyber dominance area.

In earnest pursuit, efforts are being directed towards amalgamating the digital transformation process, which proffers opportunities for momentous strides in Türkiye's developmental trajectory, with distinctive values and innovative technologies that extend benefits not only to the population of our nation but also to humanity at large.

Digital Türkiye

With the perspective of enabling public administration in terms of user-oriented service delivery, the transfer of public services to Digital Türkiye (e-Government) continues, and efforts to increase usage and cost efficiency are being carried out rapidly.

In this context, Türkiye is adopting a data-driven approach in service delivery by contributing to process simplifications in services provided electronically. The aim is to increase the number of high value-added services and make these services available to

[2] Presidency of Republic of Türkiye Digital Transformation Office, "Digital Transformation" https://cbddo.gov.tr/dijital-donusum/, Access date: 08.08.2023

everyone and to maintain the high level of satisfaction of the citizens with the e-Government Gateway by preparing user-friendly interfaces and to reflect their demands to the maximum extent.

While facilitating the lives of citizens in many areas with the integrated services of “My Vehicles”, “My Residence”, “My Working Life”, “Hajj Transactions”, “My Military Service”, the development of new integrated services continues.[3]

Data dictionary and institutional architecture studies are also ongoing to remove the barriers to data sharing between the institutional information systems needed in Digital Türkiye (e-Government) service provision, to increase the number of qualified and high value-added services and to provide a sustainable structure.

Artificial Türkiye

Rapid technological developments in recent years have led to structural changes at every stage of economic and social life. Artificial Intelligence is now considered to be the driving force of the economy.

In today's world, where objects can talk to each other and a data-oriented ecosystem is rapidly being created, countries that take rapid steps in this field also stand out in competition.[4]

Türkiye also carries out projects within the scope of its efforts to develop domestic technology production capabilities in the field of artificial intelligence technologies and to expand the effective use of these technologies throughout the economy. The areas of these projects includes;

- "Digital Twin" which aims to ensure that the methods, theoretical studies and new methods to be developed not only serve science but also turn into our industrial products and later into international brands.
- Within the scope of "Federal Learning" and "Differential Privacy" technologies to ensure the privacy and security of data.

[3] Presidency of Republic of Türkiye Digital Transformation Office, “Dijital Türkiye”, https://cbddo.gov.tr/dijital-tr/, Access Date: 08.08.2023

[4] Presidency of Republic of Türkiye Digital Transformation Office, “Yapay Zeka”, https://cbddo.gov.tr/yapay-zeka/, Access Date: 08.08.2023

- The development of Artificial Intelligence algorithms and the generation of models using these algorithms to transform algorithms with a "Black Box" approach into explainable ones.
- To prevent artificial intelligence algorithms from being misled by generating malicious data such as "Adversarial Data".

Türkiye also put into effect the 2025 Artificial Intelligence Strategy. This strategy has 6 priorities, 24 objectives and 119 measures were determined. Those six strategic priorities are;

- Training AI Experts and Increasing Employment in the Domain
- Supporting Research, Entrepreneurship, and Innovation
- Facilitating Access to Quality Data and Technical Infrastructure
- Regulating to Accelerate Socioeconomic Adaptation
- Strengthening International Cooperation
- Accelerating Structural and Labor Transformation

Big Data

With respect to the power of data and the capability to process the data which are deemed the determinants of power, Türkiye is working towards a governance approach that focuses not only on data but also on generating value from data in the digital age. In this regard, Türkiye is carrying out studies to obtain the required quality data through the National Data Dictionary and Open Data Portal Projects.[5]

Cybersecurity

Every system that is moved to the digital environment brings with it new and serious security risks. Accordingly, cyber security is the fifth operational area after land, sea, air and space, and is the most important and integral component of national security for countries.

Partial or total disabling of infrastructures, systems and services such as communication systems and infrastructures, smart grids, electricity, water, natural gas, transportation systems, dams, e-commerce, banking systems and Digital Türkiye applications has the potential to disrupt social order and endanger national security. Türkiye has started to work on developing smarter and more deterrent methods against new generation smart attacks with the power of innovative digital technologies. Türkiye carries out efforts to

[5] Presidency of Republic of Türkiye Digital Transformation Office, "Büyük Veri", https://cbddo.gov.tr/buyuk-veri/, Access Date: 08.08.2023

disseminate domestic and national technologies. It supports cooperation with universities, industry, private sector and NGOs, in all sectors, especially in the public sector and working to create an ecosystem with international competitiveness in the field of cyber security, where all these stakeholders manage the risks in cyberspace competently in cooperation. [6]

Digital Transformation Journey of the EU

The digital agenda in the EU goes all the way back to 2010 when a Communication from the European Commission set out A Digital Agenda for Europe with the aim of delivering sustainable economic and social benefits from a digital single market based on fast and ultra-fast internet and interoperable applications. Then in 2015 came the EU's Digital Single Market Strategy put forth for achieving a closer digital harmonisation between the Member States so as to contribute to economic growth, competition, investment and innovation as well as to increasing the number of jobs. The strategy was based on better access for consumers and businesses to digital goods and services across Europe; creating the right conditions and a level playing field for digital networks and innovative services to flourish; maximising the growth potential of the digital economy.

Digital transformation in the EU became a top priority when the European Commission led by Ursula von der Leyen announced, following her election in 2019, the twin priorities of green and digital transformations for Europe; the twin transformations which would lead the EU towards their vision of a Green Europe fit for the Digital Age. The vision is for "a Europe where digital technologies, innovation, and artificial intelligence can provide Europe's people with competitive jobs, better health, and better public services."[7] The European Commission proposed a path to the Digital Decade, supported by the 2030 Digital Compass, a plan to achieve digital transformation of the EU economy and society. Digital Compass is designed around digital skills, secure infrastructure, digital transformation of businesses and the digitalisation of public services.

The Digital Economy and Society Index (DESI) the European Commission has been preparing since 2014 identifies indicators on Europe's digital performance to track the progress of the Member States towards a digital economy and society. DESI 2022 report confirms that there is an overall progress in the digital transformation of the MS, especially those MS which were on the lower end of the spectrum are catching up with the rest. However, the results also show that uptake of key digital technologies such as AI

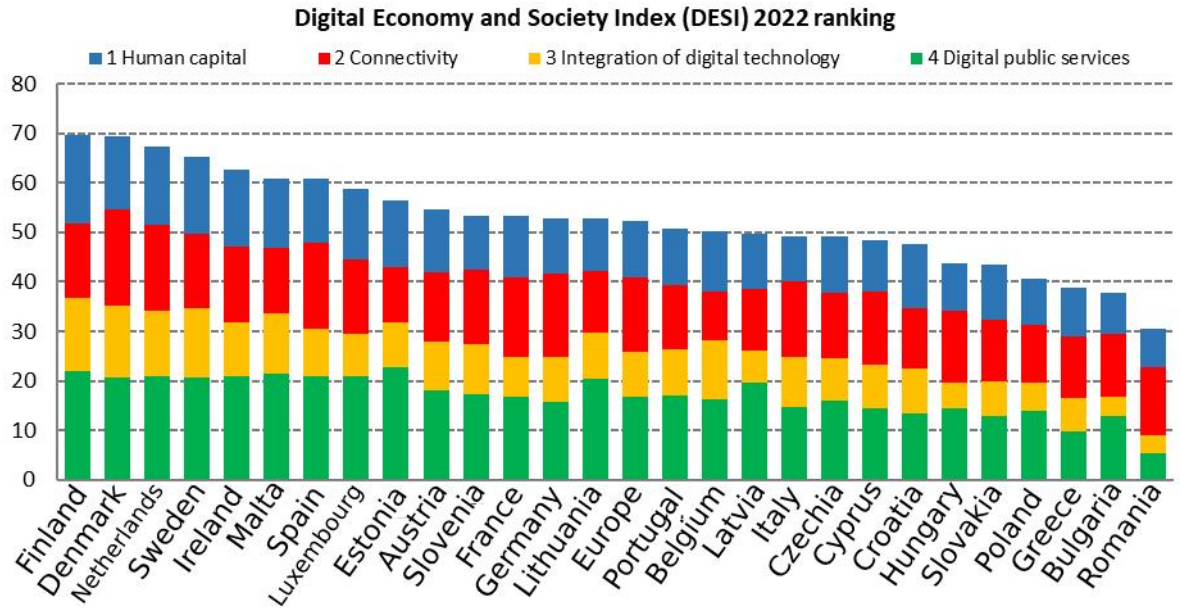
[6] Presidency of Republic of Türkiye Digital Transformation Office, "Siber Güvenlik", https://cbddo.gov.tr/siber-guvenlik/, Access Date: 08.08.2023

[7] Digitaleurope, "Crucial Aspects of Digital Transformation", https://www.digitaleurope.org/?post_type=policy&p=9161&preview=true/#Crucial, Access Date: 16.08.2023

and big data is still low by businesses; digital skills are not sufficient to overcome digital divide and prevent digital exclusion as more services are being carried out online. Also, connectivity infrastructure, especially 5G, retired for innovative services and applications need more investment. Finland, Denmark, the Netherlands and Sweden are found to be the leading countries in the field of digitalisation.

As seen below, DESI 2022 looks at the indicators of digital transformation under four categories: human capital, connectivity, integration of digital technology and digital public services.

Figure:1 DESI 2022 Ranking[8]



Source: DESI 2022, European Commission

Comparison between Türkiye and the EU

In 2019, a set of 22 indicators were determined for measuring success in terms of digital transformation in Europe by the year 2025.[9] In this study, these 22 indicators, targets and the situation at the time (2019) are used as a guide to make the comparison between Türkiye and the individual EU countries or EU average:

[8] European Commission, 28.06.2022, "Shaping Europe's Digital Future: DESI", https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022, Access Date: 18.08.2023

[9] Digital Europe, 20.02.2019, "Success indicators for 2025", https://www.digitaleurope.org/resources/success-indicators-for-2025/, Access Date: 18.08.2023

-People without formal education who are regular internet users

In 2019, 61% of people with low or no education used the internet less than once a week. The target was to increase this to 90%. This indicator is important because divides by age, gender, educational attainment, and income level reduce digital inclusion. The increase in the proportion of the internet users irrespective of formal education shows how widespread is digital transformation among the population.

The share of workers with information and communications technology (ICT) task-intensive occupations, those having a high propensity to include ICT tasks ranging from the use of the internet to word processing to programming, provides a measure of the share of the workforce that performs ICT-related tasks.

- *Women working as ICT specialists*

At the time, only 1.4% of women in the EU were employed as ICT specialists. The target was to increase this to 6%.

As of 2020, in general, the share of ICT task-intensive jobs is 6.2% in Türkiye compared to the EU27 average of 12 % whereby Luxembourg has the highest share with 27% and Italy has the lowest share with 7.3% of ICT task-intensive jobs in the workforce.

The share of jobs in digital-intensive sectors in total employment in Türkiye is 40% in low-digital jobs and 10% in high digital jobs. Highest in the EU is Luxembourg, both high and low digital jobs accounting for 30% of the total employment. Lithuania, on the other hand, is more similar to Türkiye; high digital jobs are only 10% of total employment whereas the share of low digital jobs is 30%. These data are as of 2018.

As of 2015, workers receiving employment-based training amount to 39% for Türkiye, with the high skilled training being 64%. The highest figure in the EU is in Finland with 76%, for high skilled the number goes up to 86%. The lowest figures are found in Greece where the overall is 30% and high skilled for 50%.

- Access to 4G

Reliable high-speed connectivity forms the foundational basis for the integration and effective utilization of various technologies like cloud computing and extensive data analysis, along with an array of services such as video streaming. Although 5G and upcoming generation networks pledge the swiftest speeds, 4G technology still furnishes speeds that are adequate to facilitate numerous online activities for individuals and enterprises.

In 2019, one household out of ten in rural areas still did not have this basic connectivity right. By 2025, every European household should have access to 4G. By 2021, approximately 99% of people in almost all of the EU's member states have access to 4G broadband. In Türkiye, 4G service is available to 96.8% of the population. Only Brazil's 88.3% and Chile's 88% of the population can use 4G in 42 of the OECD countries, where more than 90% of the population can use the connection.[10]

Similarly, the speed of the broadband connection is an important factor. Therefore, the proportion of European households having a broadband connection with 100 Mbps, or more is a good indicator of the level of digital transformation.

-European households having a broadband connection with 100 Mbps or more

In 2019, only one out of five European households had a broadband connection with 100 Mbps or more. The target is for 70% European households to have a broadband connection with 100 Mbps or more by 2025.

Denmark has the fastest broadband internet among EU countries with being the 8th in the world ranking with 192.68 Mbps download and 106.97 Mbps upload speeds in July 2023. These speeds were 150,98 Mbps for download and 92.72 Mbps for upload in July 2022.[11] In mobile internet speed list, Netherlands is in the lead in EU countries with 106.27 Mbps download and 14.87 Mbps upload speeds, being the 9th in the world. These speeds were 99.54 Mbps for download and 14.12 Mbps for upload in July 2022.[12] Fastest country for fixed broadband internet is Singapore with 247.44 Mbps download and 205.73 Mbps upload speeds in the world.[13] For mobile internet, United Arab Emirates is the first with 205.77 Mbps download and 23.19 Mbps upload speeds.[14]

Türkiye is also rising in the internet speeds with rising gigabit internet access in recent years. According to *Ookla's Speedtest* results, global average speed for fixed broadband internet was 67.35 Mbps for download and 28.50 Mbps for upload in July 2022 and it's risen to 82.56 Mbps in July 2023. The global average speed for mobile internet was 30.80

[10] OECD, "OECD Going Digital Kit", https://goingdigital.oecd.org/indicator/16, Access Date: 23.08.2023.

[11] Speedtest, Speedtest Global Index, https://www.speedtest.net/global-index/denmark#fixed, Access Date: 22.08.2023.

[12] Speedtest, Speedtest Global Index, https://www.speedtest.net/global-index/netherlands#mobile, Access Date: 22.08.2023.

[13] Speedtest, Speedtest Global Index, https://www.speedtest.net/global-index/singapore#fixed, Access Date: 22.08.2023.

[14] Speedtest, Speedtest Global Index, https://www.speedtest.net/global-index/united-arab-emirates#mobile, Access Date: 22.08.2023.

Mbps for download 8.56 Mbps for upload in July 2022 and those numbers has risen to 42.35 Mbps for download and 10.4 Mbps for upload.[15]

For fixed broadband internet, Türkiye is in 111th place in world rankings with 33.89 Mbps average download and 8.34 Mbps average upload speed in July 2023 which it was 27.54 Mbps average download and 5.69 Mbps average upload speeds in July 2022. For mobile internet, Türkiye is in 69th place with 33.10 Mbps download and 13.37 Mbps upload speeds in July 2023 where it was 28.71 Mbps for download and 12.37 Mbps upload in July 2022.[16]

-5G connections being available for internet users

The target by the year 2025 for the EU is set at least 200 million users for 5G connections. As of 2021, Italy had the best 5G coverage among the EU countries with 99.7% of households having access to 5G networks, followed by Denmark and the Netherlands, 98% and 97%, respectively. 5G connections are at a testing phase in Türkiye, as of July 2023.

- Member States having to update their national broadband plans to adapt to the needs of 5G and in line with the EU's connectivity objectives

In 2021, Gigabit connectivity increased further in Europe.[17] The coverage of networks connecting buildings with fibre reached 50% of households, driving overall fixed very high-capacity network coverage up to 70% (100% target by 2030). 5G coverage also went up last year to 66% of populated areas in the EU. Nonetheless, spectrum assignment, an important precondition for the commercial launch of 5G, is still not complete: only 56% of the total 5G harmonized spectrum has been assigned, in most of the Member States (Estonia and Poland are the exceptions). Moreover, some of the very high coverage figures rely on spectrum sharing of 4G frequencies or low band 5G spectrum, which does not yet allow for the full deployment of advanced applications. Closing these gaps is essential to unleash the potential of 5G and enable new services with a high economic and societal value, such as connected and automated mobility, advanced manufacturing, smart energy systems or eHealth.

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[15] Speedtest, Speedtest Global Index, https://www.speedtest.net/global-index, Access Date: 22.08.2023.

[16] Speedtest, Speedtest Global Index, https://www.speedtest.net/global-index/turkey#fixed Access Date: 23.082023.

[17] European Commission, "eGovernment Benchmark 2022", 28.07.2022, https://ec.europa.eu/newsroom/dae/redirection/document/88764, Access Date: 22.08.2023.

Retraining of the existing workforce is also crucial for a high level of digital transformation for business and the economy at large.

-*Retraining of the workforce in the Member States and companies across Europe*

In 2019, 52% of workers were estimated to need reskilling. The target for 2025 is to retrain 20% of the workforce, leaving only 32% of workers in need of reskilling.

As of 2015, workers receiving employment-based training on average amount to 39% for Türkiye, with the high skilled workers receiving firm-based training as a percentage of high skilled workers being 64%. The highest figure in the EU is in Finland with 76%, for high skilled the number goes up to 86%. The lowest figures are found in Greece where the overall is 30% and high skilled for 50%.

-Enterprises providing ICT training to their employees

In 2019, only 22.6% of all European enterprises were recorded to be providing ICT training and this number should increase to 30% of their employees.

Research and development (R&D), particularly within sectors focused on information, assume a pivotal role in propelling digital advancements. This metric quantifies the monetary outlay by businesses in information industries for R&D activities, regardless of the origin of funding, relative to the overall value of the nation's gross domestic product (GDP).

-*The amount of GDP to be spent on Research & Development in information industries*

The target for European countries by 2025 is 3% of their GDP. Israel is in the lead with 4.61%. In 2019, Japan already met that target with 3.3% spending, and in the US it was 2.8%. The EU average was 2%. As of 2019, among EU countries, Sweden's 2.43% of the GDP goes to R&D with being the leader while Latvia being the last with 0.22%. According to 2019 data Türkiye's 0.68% of the GDP goes to R&D and in OECD countries.[18] World Bank data for 2020 indicates that Türkiye's R&D expenditure is 1,08% of its GDP.[19]

-Research and Innovation spending should be targeted at ICT technologies

In 2019 only Japan meets this target with the US at 8.2 and the EU at 6.8%. By 2025, this amount is expected to increase to 10%.

[18] OECD, "OECD Going Digital Kit", https://goingdigital.oecd.org/indicator/31, Access Date: 22.08.2023.

[19] Trading Economics, "Turkey - Research And Development Expenditure (% Of GDP)", https://tradingeconomics.com/turkey/research-and-development-expenditure-percent-of-gdp-wb-data.html Access Date: 07.09.2023.

- Share of information and communications technology patents

Assets that lack a physical form (such as patents, organizational capital, and software) encourage digital innovation. These metric gauges the number of patents within the field of information and communications technology (ICT), expressed as a fraction of the total IP5 patent families categorized by the country of ownership. This metric can serve as a representative measure of the technological advancement within the ICT sector.

Turkish business' 21.3% are in IP5 patent family while Sweden is being on the lead among EU countries with 46.2% and Slovenia being the last with 6.2%. The EU average is 19.2%.[20]

-European manufacturing industries leveraging big data analytics

In 2019 10.8% of the European manufacturing industries leverage big data analytics. By 2025, the target is that 30% of European manufacturing industries should leverage big data analytics.[21]

-The proportion of internet users ordering goods or services online across EU borders

It is clear from the way businesses use digital technologies to revolutionize their operations that these changes affect how they compete, trade, and invest. Market openness creates an enabling environment for digital transformation to flourish.

More firms are buying and selling online than ever before, including across borders, opening new markets and increasing productivity through lower prices and access to a larger variety of goods and services. This indicator measures businesses using e-commerce to sell to customers in other countries as a share of all businesses making e-commerce sales. An e-commerce sale refers to the sale of goods or services conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders. It provides an indication of the potential to boost growth and consumer welfare.

In 2019, the proportion of internet users ordering goods or services online across EU borders were only 18%. By 2025, the EU's target is that 35% of internet users should order goods or services across EU borders.

[20] OECD, "OECD Going Digital Kit", https://goingdigital.oecd.org/indicator/33, Access Date: 22.08.2023.

[21] Digital Europe, "Success indicators for 2025", 20.02.2019, https://www.digitaleurope.org/resources/success-indicators-for-2025/, Access Date: 22.08.2023.

On the other hand, as of 2020, share of businesses that make e-commerce sales that sell across borders in Türkiye is 21.9%. Of this, only 3.6% accounts for businesses undertaking e-commerce sales to EU countries exclusively and in the EU27, the average is 43.1% with the highest share recorded in Luxembourg at 62.4% and the lowest share in Finland at 29.2%. Similarly, in the EU 19.9% of the e-commerce sales are exclusively to EU countries.[22]

- The number of unicorns in Europe

Emerging enterprises contribute to the augmentation of productivity by facilitating the efficient redistribution of resources from less effective incumbents to agile, smaller firms. Furthermore, these fledgling entities play a significant role in propelling digital innovation, as they are instrumental in bringing novel technologies into commercial realms. This metric quantifies businesses that have been initiated within the last two years (encompassing both newly established enterprises and those existing for one to two years) within the information industries, in relation to the entire count of employer enterprises. It serves as a gauge of the vibrancy within the business landscape.

In 2017, the EU was home to just 11.6% (and nearly half of them are based in the UK), far behind the US and China. Europe set the target for 2025 for Europe to be home to 25% of the world's unicorns.

Start-up firms in information industries in Türkiye is in the 3rd place in OECD countries with 32.8% of the companies are start-ups (2 year old enterprises). While Colombia is 1st with 38.4% and United Kingdom is 2nd with 36.8%, EU country with highest rate is Estonia with 29.9% and Belgium is lowest with 10.8%.[23]

- The digitalisation of public services, existence and use of eGovernment services is a good indicator

Digital advancements provide avenues for enhancing accessibility, scope, and excellence of public services, alongside elevating the efficacy of policymaking and service structuring. This metric evaluates the proportion of adults who utilize the Internet to engage with public entities for personal reasons, as a fraction of the entire adult population. The term "public authorities" pertains to governmental services and administrative functions carried out at the local, regional, or national tiers.

[22]OECD, "OECD Going Digital Kit", https://goingdigital.oecd.org/indicator/72, Access Date: 22.08.2023.

[23] OECD, "OECD Going Digital Kit", https://goingdigital.oecd.org/indicator/34, Access Date: 23.08.2023.

The four dimensions used to evaluate online public services were:[24]

1. User centricity
2. Transparency
3. Key enablers
4. Cross-border services

In Europe, 52.5% of people used eGovernment services in 2019. The goal is for 75% of EU residents to be utilising eGovernment services by 2025.

In 2022, 51% of the population of EU countries are using the internet for visiting or interacting with public authorities' websites with 44% of the population downloading official forms from those websites. Türkiye is in the upper-middle part in this chart with 66% of the population visits the government websites which the main portal is called eGovernment, yet only 32% of the population downloads official forms from those websites.

Denmark is the highest in the EU countries with 92% of the population visits the public authorities' websites but only 39% of the population downloads the official forms. Germany is the lowest with 33% of the population visits and 26% of the population downloads forms.[25]

As for health and care services provided online, in 2018, only 18% of the EU citizens were using health and care services provided online. By 2025, 30% of EU citizens should use health and care services provided online, following the example of Estonia and Finland where almost 50% of citizens took advantage of such services online.

A comparison is made between the state of digital transformation with respect to eGovernment services in the table below.[26]

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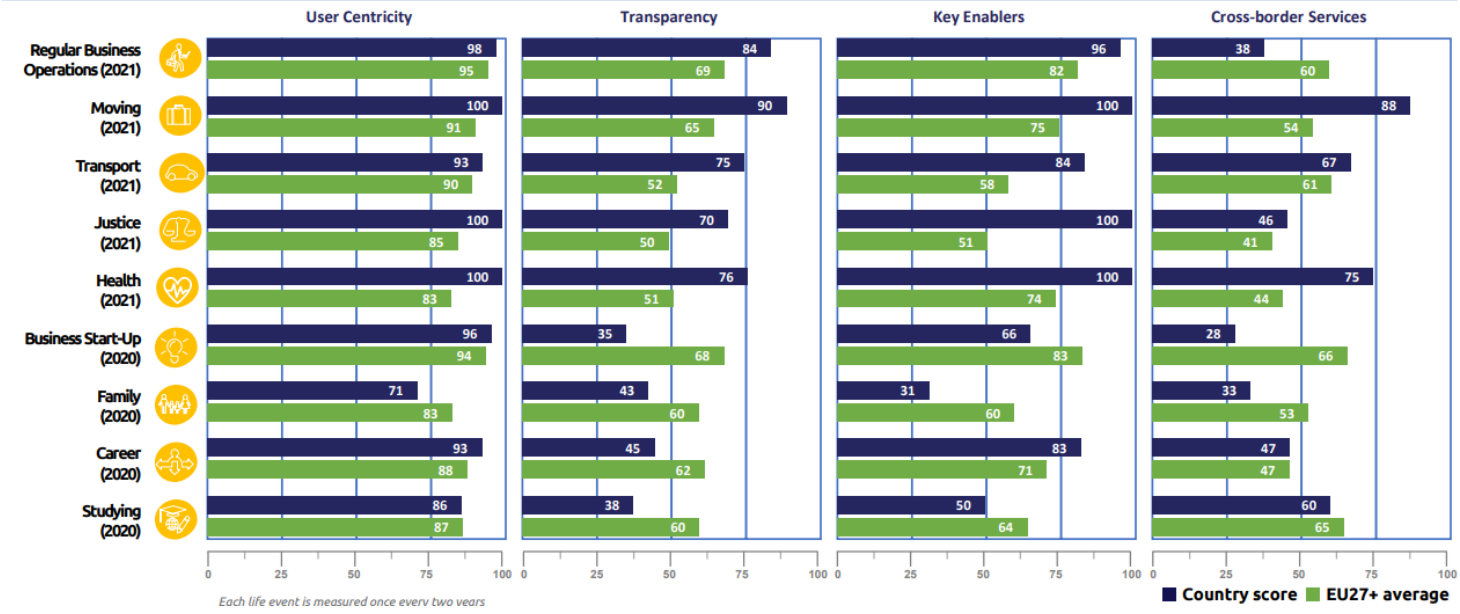
[24] European Commission, "eGovernment Benchmark 2022", 28.07.2022, https://digital-strategy.ec.europa.eu/en/library/egovernment-benchmark-2022, Access Date: 23.08.2023.

[25] OECD, "OECD Going Digital Kit", https://goingdigital.oecd.org/indicator/23, Access Date: 23.08.2023.

[26] European Commission, "eGovernment Benchmark 2022", 28.07.2022, https://ec.europa.eu/newsroom/dae/redirection/document/88733, Access Date: 22.08.2023.



According to the table above, eGovernment services provided by Türkiye are comparable to those in the other EU countries. In the area of health, justice, business start-up and regular business operations, Türkiye is almost always higher than the EU average with respect to user centricity, transparency, key enablers and cross-border services.

Some of the other indicators determined by the EU to show the level of digital transformation in the Member States are: European enterprises having a clear cybersecurity strategy, CO2 emissions saved by digitising resource-intensive sectors and internet users being deterred from online purchases due to safety concerns. Each of them represents a different aspect of digital transformation such as security and trust.

Conclusion

Türkiye is the EU's 7th biggest trade partner in 2022, imports and exports combined. On the other hand, the EU is by far Türkiye's largest merchandise import and export partner. This data shows the close relationship between the EU and Türkiye. In addition, the fact that Türkiye is a candidate country and formed a customs union with the EU makes it imperative that Türkiye adapts to the changes that are taking place in the Union. Therefore, the EU's twin priorities of green and digital transformations must be on Türkiye's top priority list as well. The existence of the Digital Transformation Office in 2018 is proof that, Türkiye has already set out on this road. Aligning itself with the legislations adopted by the Commission and the Council in order not to lose and even increase its competitive power vis-à-vis European countries is not a choice but an obligation for Türkiye. Digital transformation has to be inclusive; it not only has to be adopted and incorporated at the government level but also presented to businesses,

especially SMEs. Necessary infrastructure have to be provided for individuals to access to tools enabling them to take part in this transformation process.

All in all, the strategy the government is following is aligned with that of the EU in all aspects, especially with respect to the eGovernment services. The online public services provided by Türkiye are comparable to the EU average and even at higher levels in certain areas like health, as imposed by the developments during the COVID-19 pandemic. The level of digital transformation among the EU Member States are vary widely. Some EU countries score very high on most indicators while others are on the lower end of the scale, much lower than Türkiye. Türkiye needs to speed up the actions to be taken for the implementation of the targets set out under the Digital Strategy carried out by the Digital Transformation Office.