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# Future of Work

Turkey's Talent Transformation in the Digital Era  
Executive summary  
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Prepared by McKinsey & Company  
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# Future of Work: Turkey's Talent Transformation in the Digital Era - Report Summary

**Advances in automation, artificial intelligence (AI), and digital technologies are changing the way we work, the activities we perform, and the skills we need to succeed. Catching this rapid transformation wave is of the utmost importance to ensure sustainable growth. McKinsey & Company has focused in the past decade on Future of Work research and served its clients on this topic.**

In addition, the McKinsey Global Institute (MGI), the business and economics research arm of McKinsey, has studied the effects of automation on workforces and skills since 2015 and has described options that could help stakeholders benefit from potential changes in business models.

MGI considers adoption of digital technologies the most important factor in future economic growth. Research shows that adoption of digital technologies will account for about 60 percent of the potential productivity increase by 2030.<sup>1</sup> This holds true for Turkey: automation, AI, and digital technologies have the potential to boost the country's economy, so it is critically important to understand the opportunities and challenges regarding the future of work and to prepare the Turkish workforce for the upcoming transformation.

McKinsey & Company Turkey has worked over the past 6 months to create this report based on the experience and expertise of its 250 employees and insights from MGI. We examined the impact of productivity growth driven by automation, AI, and digital technologies on different sectors and occupations. We addressed the opportunities that will emerge to transform Turkey's talent marketplace and the challenges that must be overcome, supported by a fact base that will help stakeholders prioritize efforts to adapt the workplace to this new world. We hope that this report will shed light on the benefits that automation and increased productivity will bring to the country by 2030.

On a global scale, current technologies have the potential to help automate 50 percent of jobs. In Turkey, with the current technologies, six out of ten occupations could be automated by 30 percent. The analyses in this report are based on a scenario in which average levels of automation in Turkey are 20 to 25 percent by 2030.

The report foresees that in the next decade, automation, AI, and digital technologies, along with complementary investments, have the potential to create 3.1 million net new jobs, considering the economic impact and societal changes the technology will bring. By 2030, with the impact of automation and digitization, 7.6 million jobs could be lost, and 8.9 million new jobs could be created, a net gain of 1.3 million jobs. In addition, 1.8 million jobs that currently do not exist could be created, many of them in technology-related sectors. To enable this change, 21.1 million people in the Turkish workforce will need to improve their skills by leveraging technology while remaining employed in their current jobs. Automation and digitization are expected to affect 7.6 million employees through significant reskilling and job displacements. In addition, 7.7 million new employees who will join the workforce will need to be equipped with the latest skills required.

To ensure the success of Turkey's talent transformation, a common focal point and collective, concerted action are needed. It is critical that all stakeholders, including businesses, associations, public institutions, educational institutions and individuals, take the required actions.

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<sup>1</sup> Solving the Productivity Puzzle: The Role of Demand and the Promise of Digitization, February 2018, McKinsey Global Institute.

## **Methodology**

In preparing this report, we used a rich data set, including detailed country-wide occupation and wage data for each sector and Turkey-specific indicators related to education, energy, infrastructure, technology, and macroeconomics.

We employed a threefold methodology to create scenarios for jobs lost, jobs gained through automation, and impact on skill requirements.

For jobs lost through automation, we assessed 800 occupations and 2,000 work activities for 18 skills and identified each activity's time susceptible to automation as lost work time. For example, a customer service representative performs more than 20 activities. We found that activities such as product stock control and reporting of activities and sales could be automated, whereas activities such as welcoming customers and visitors and providing personalized advice regarding products and services have limited automation potential. Similarly, while a production worker's activities such as production planning and product packaging could be automated, activities such as tracking product quality control via the system and managing production teams have limited automation potential.

In addition, we modeled the impact of more than 20 global trends on labor demand in order to calculate the impact of productivity growth on economy and workforce growth. We took rising incomes, aging population, development and deployment of new technologies, infrastructure investments, energy transitions, and efficiency and creation of new markets as factors that could influence labor force demand growth by 2030.

For the implications of skill changes, we defined current and required skills for the changing nature of jobs by mapping each of 2,000 activities to 25 skills in five categories and understood the skill gap to be closed through talent transformation. We analyzed the results by comparing them with data for 46 other countries. We studied in detail how the changes will affect 15 different sectors.

We held discussions with representatives of business, academia, media, the social sector, and government to interpret the results, fine-tune implication estimations, and exchange ideas on potential actions that stakeholders could take to help us develop an assessment of Turkey's talent transformation in the digital era.

## Key messages

**1. Automation, AI, and digital technologies already play a prominent role in our lives and will be even more influential in the future. Their application, through increasing productivity and economic growth, can create shared prosperity and better lives for all.**

We are on the cusp of a new digital age in which technologies not only do things that we thought only humans could do, but also can increasingly do them at a superhuman level of performance. Physical robots have been used for years, but we are seeing much more flexible, safer, and less expensive robots engaging in service activities in various sectors, boosting economic growth, creating jobs, and improving living standards. Our research shows that, at a global scale, adoption of current automation, AI, and digital technologies can affect 50 percent of the world economy. This is equivalent to 1.2 billion employees and \$14.6 trillion in wages.<sup>2</sup>

In this respect, we see varying levels of impact in different sectors. For example, education technology is broadening access to courses, providing more memorable and effective instruction. The best-performing education systems offer teachers ongoing training so they can keep up with the latest digital solutions and techniques. In healthcare services, artificial intelligence can potentially diagnose some diseases better than physicians. For example, a deep learning convolutional neural network surpassed dermatologists at identifying cancerous skin lesions by visual examination alone. Similarly, in retail, consumers benefit from online platforms, which provide price transparency and ease of access and help to speed delivery. In some African countries, drones are delivering essential products anywhere in the country in 15 minutes.

With respect to infrastructure and the environment, we see smart buildings using sensors and data analytics to improve energy management. For example, AI technology used at data centers helps cut cooling bills by up to 40 percent. Beijing reduced air pollution by 20 percent after it installed air-quality sensors and regulated traffic and construction according to the pollution level.<sup>3</sup>

We see that automation has the potential to improve healthcare, education, traffic, emergency response, and the environment. Automation can help reduce workplace hazards, make housing more affordable, and benefit consumers in numerous ways. It can also improve job satisfaction and make labor markets more flexible. At the same time, it can increase productivity growth, which will soon be the driver of economic growth in many mature economies.

**2. In Turkey, automation, AI, and digital technologies are prompting behavioral and habit shifts in an average person's daily life. This impact grows even more when combined with economic and social changes.**

Societal changes driven by advances in technology and changing needs are boosting an increase in consumption in Turkey.

These changes are leading to an even more service-oriented economy than the country has today. People tend to consume food and beverage more often outside the home and to engage in cultural and sports activities and in travel. The aging population increases the demand for healthcare services and care providers. Many people want to get advisory support in areas requiring expertise, boosting service industry. At the same time, digitization and e-commerce facilitate easy access to products and services, allowing smaller companies and entrepreneurs to rapidly expand their businesses through reaching a broader customer base.

All of these changes support economic growth with increased productivity and demand for new services.

**3. Although automation, AI, and digital technologies could result in some job losses, gains in productivity, increased investment, and the growth of the service economy could lead to the creation of as many as 3.1 million jobs by 2030.**

Only 2 percent of occupations in Turkey are completely automatable, whereas about 60 percent of jobs have at least 30 percent automatable activities. The tasks most susceptible to automation are predictable physical activities and data collection and processing activities. Duties that require human interaction, people management, and expertise are less susceptible to automation.

Automation, AI, and digital technologies are expected to transform numerous jobs in many sectors and to create new ones. Overall, 2030 baseline employment in Turkey is estimated to be about 33.3 million. With the impact of automation and digitization, 7.6 million jobs could potentially be lost by 2030. We estimate that 8.9 million new jobs could be created by 2030 for a net gain of 1.3 million jobs. We expect impacts on productivity and economic growth as well as societal changes driven by digitization to accompany this job growth.

In addition, we estimate that 1.8 million jobs could be created in occupations that currently do not exist, particularly in technology-related sectors. For example, we expect the creation of new roles such as digital service designers, sustainable energy experts, cybersecurity specialists, and AI-assisted healthcare technicians.

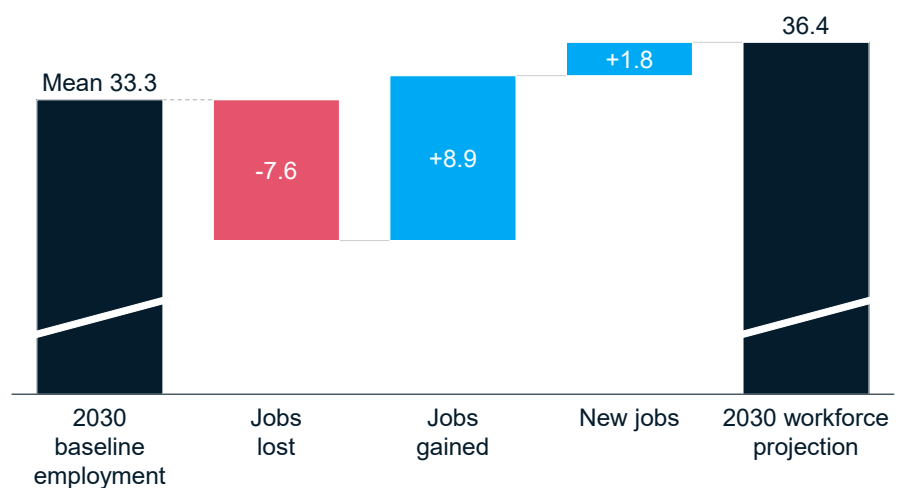
<sup>2</sup> *Technology, jobs and the future of work*, McKinsey Global Institute, May 2017.

<sup>3</sup> *A government blueprint to adapt the ecosystem to automation and the future of work*, McKinsey & Company, November 2019.

## Automation and digitization will significantly transform jobs and create new ones

### Change in labor demand in Turkey

Projection with average 20–25% automation level  
Million, 2018–30



**+3.1M**

Job increase  
potential  
by 2030

As a result, the Turkish economy has the potential for a net job increase by of 3.1 million 2030, and expected total demand for a workforce of 36.4 million.

Taking a sectoral view, the job increases will manifest most strongly in service sectors—retail sales and service, healthcare services and care providers, food and beverage, and accommodation. Occupation groups reflect similar trends. The number of jobs that require customer interaction and the number of care providers will increase. We expect 30 percent growth in the retail sales and service industry workforce. Healthcare services and care providers are expected to grow by 40 percent, and the food and beverage and accommodation sectors are expected grow by 20 percent.

#### 4. Upskilling and reskilling initiatives will play a key role in talent transformation.

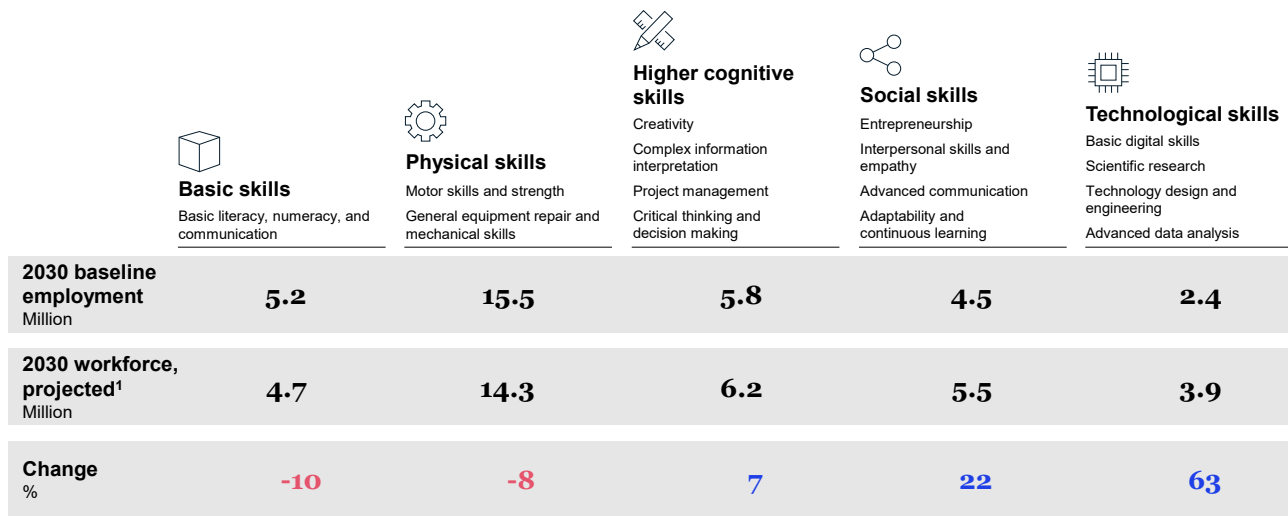
In order to ensure Turkey's talent transformation, 21.1 million workers will need to improve their skills, leveraging technology while remaining employed in their current jobs. In addition, automation and digitization are expected to have an increased impact on 7.6 million employees who will experience significant reskilling and job displacements. Within this group, 5.6 million people are expected to change roles by upskilling and 2.0 million are expected to gain new skills to be able to work in different sectors or in different occupations. It will be critical to equip 7.7 million new employees with required skills as they join the workforce.

#### 5. The workforce will need to acquire stronger social skills and advanced technological skills.

Workplace skills of the future fall into five categories: physical and manual, basic cognitive, higher cognitive, social and emotional, and technological. In most sectors in Turkey, the greatest increase in time spent on work activities that require certain abilities is expected to be for technological and social skills. By contrast, since activities such as data entry and equipment operation are more susceptible to automation, the demand for basic cognitive skills and physical skills could decrease in most sectors.

In 2030, if the anticipated talent transformation can be ensured, the greatest change is expected to be in technological skills, with a rate of 63 percent. While social skills are expected to increase by 22 percent and higher cognitive skills by 7 percent, basic cognitive skills and physical skills are forecast to decrease by 10 and 8 percent, respectively.

# In the next 10 years, demand for workers with social and technological skills will increase



1. Projection with average automation level of 20–25%, does not include 1.8 million entirely new jobs

## 6. All relevant stakeholders should collaborate on a broad range of Future of Work initiatives to make Turkey’s talent transformation happen.

All stakeholders, including businesses, associations, public institutions, educational institutions, and individuals must take required actions to benefit from the opportunities created by automation, AI, and digital technologies and to overcome the related challenges.

Following is a summary of what each party could do.

### Businesses and associations:

- **Strategic workforce planning:** Leading companies should undertake efforts to conduct strategic workforce planning and prepare road maps for talent transformation. Companies should make targeted investments focused on employee reskilling and upskilling initiatives. Using sophisticated workforce planning tools and predictive analytical models to plan for talent acquisition could enhance efficiency.
- **Talent transformation programs:** Companies should set ambitious targets for automation through the latest technologies. Companies will need to add positions that require knowledge of data analytics and AI technologies and to invest in IT professionals. In addition, companies can leverage corporate academies to improve employee skills, from leadership skills to digital skills.

### New working models:

Companies must move from traditional “waterfall” approaches to flexible and efficient working models. Agile and empowered teams should be created. Employees should also be prepared for the new working models and leadership approach.

### Public institutions:

- **Geographical and sectoral strategic workforce planning:** Public institutions could engage in country-wide strategic workforce planning and establish priorities. Looking at the country’s talent pool, they should analyze existing skills and plan a road map that anticipates the skills needed in the future.
- **Centers of development and technology:** Public institutions could set the priority areas for reform, establish dedicated mechanisms to enable a holistic approach, and coordinate implementation. They might also consider creating a dedicated central unit to oversee and carry out country-wide automation and retraining initiatives, with representatives from key ministries such as labor, education, and industry.
- **Accelerating mechanisms and incentives:** Public institutions could work to establish job centers to facilitate reskilling and reemployment efforts, especially for acquisition of technological skills. Special attention should be given to Technology Development Zone skills development programs and to model factories that are being established. Turkish Employment Agency (ISKUR) programs intended to mitigate the impact of automation and digital transformation on supply-demand



balance in the employment market should be revised and implemented. Furthermore, the asset-liability balance in the social security system can be closely followed considering potential disrupting effects of the technologies on the employment market. Social security and premium models aligned with the digital transformation level can be evaluated and implemented in order to balance the pace of transformation.

#### **Educational institutions:**

- **Revising the education model:** The education system should revamp school curricula to incorporate in-demand skills. Relevant classes could be made compulsory at appropriate levels. Universities and educational institutions should create programs tailored to future skills, open to adults through seminars, certificate programs, and online training.
- **Improving learning experience:** The classroom experience should be more personalized, shifting from traditional content on traditional schedules to building job skills anytime, anywhere. The new learning experience can be built through collaborating with community centers, employing experts, and using peer-to-peer or project-based instruction. Content should include problem-solving skills, rapid prototyping, and asking the right questions.
- **Lifelong learning:** The education system needs to build the mind-set of “learning to learn,” emphasizing the willingness to continuously adopt new skills. This approach allows students to build the foundations of critical thinking, problem solving, and lifelong learning. Local governments can assume a key role to access a higher number of people in order to support lifelong learning.

#### **Individuals:**

- **Continuous learning and self-development:** Individuals must own their own learning journeys by continuously updating skills throughout their careers. Leaders should understand individuals’ need for capability building, both for themselves and for their organizations, and should lead the transformation.
- **Social and technological skills:** Individuals must focus on developing the key skills and attributes of the future, including social skills (such as resilience and adaptability), technological skills (such as programming and data analysis), and cognitive skills (such as critical thinking, problem solving, and creativity). Leaders should prepare their organizations for building such capabilities.
- **Lifelong flexible career paths:** Individuals will have to embrace a “startup of you” mind-set and take an entrepreneurial approach to their careers. Project-based, independent, and part-time jobs are on the rise. Individuals should prepare themselves for lifelong flexible career paths.

**Automation, AI, and digital technologies offer big opportunities for Turkey to improve productivity and generate many new jobs.**

**To take advantage of this opportunity, Turkey should invest in talent transformation to develop the new skills required in the workplace of the future. It is critical for all stakeholders to work together to achieve this transformation. We believe that this talent transformation journey will unlock the country’s strong potential.**