



PRESIDENCY OF  
THE REPUBLIC OF TÜRKİYE  
**INVESTMENT  
OFFICE**

# **WHY INVEST IN TURKISH ICT SECTOR**

[INVEST.GOV.TR](https://invest.gov.tr)



# AGENDA



- 1 Executive Summary
- 2 Turkish ICT Sector Outlook
- 3 Growth Drivers in Türkiye
- 4 Opportunities in Turkish ICT Sector
- 5 Start-up Ecosystem
- 6 Success Stories

## EXECUTIVE SUMMARY

# EXECUTIVE SUMMARY



## FAVORABLE INVESTMENT ENVIRONMENT

- Strong macroeconomic growth with increasing income per capita and a burgeoning middle class
- Favourable demographics with a dynamic, young and online population supporting the industry
- Cost-competitive ICT skills and communication data infrastructure
- Strong government support through technology and innovation ecosystems as well as incentives that focus on R&D



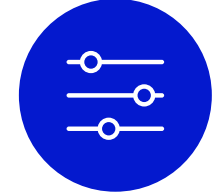
## STRONG INTERNATIONAL PRESENCE

- Global ICT companies have been present in Türkiye with significant activities, using Türkiye as a managerial hub to access regional markets
- Successful partnerships with local companies to grow in the region, capitalizing on locals' human capital, experience and networks



## MARKET POTENTIAL

- World-scale domestic demand and strong ICT skills offer ample opportunities in telecommunications, e-commerce, gaming, banking and finance, data analytics and AI, cloud & data center operations, digital transformation of the Turkish industry, public investments, e-government projects and ICT use in automotive, healthcare sectors



## ROBUST GROWTH IN THE SECTOR

- Turkish ICT market surpassed USD 24,7 billion in 2022
- The backbone of the growth is the young and well-educated human capital that the country offers
- The ICT ecosystem is strongly backed by international and local companies, creating a diverse environment for all players



## AGENDA

# 2

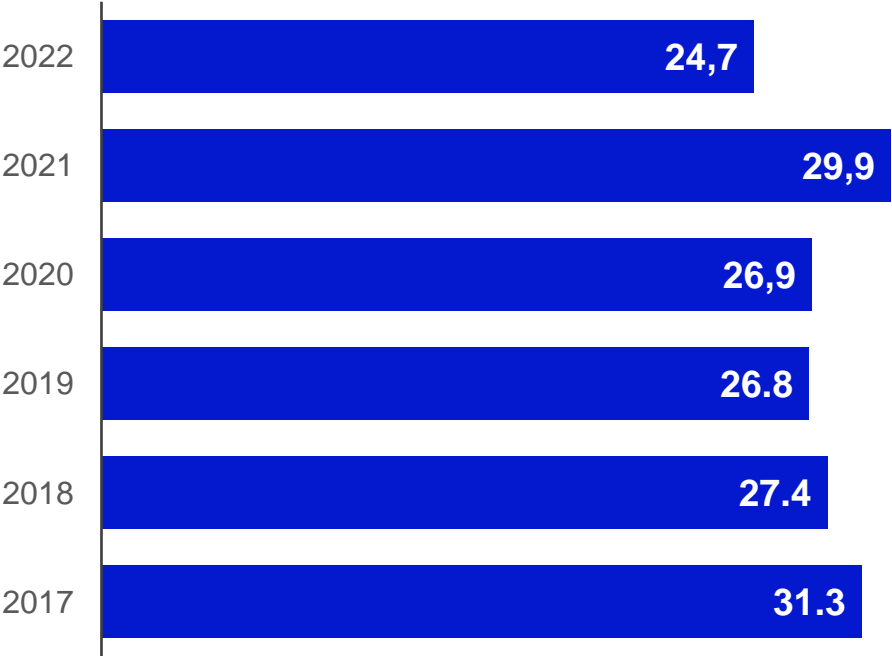


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# TURKISH ICT SECTOR OUTLOOK



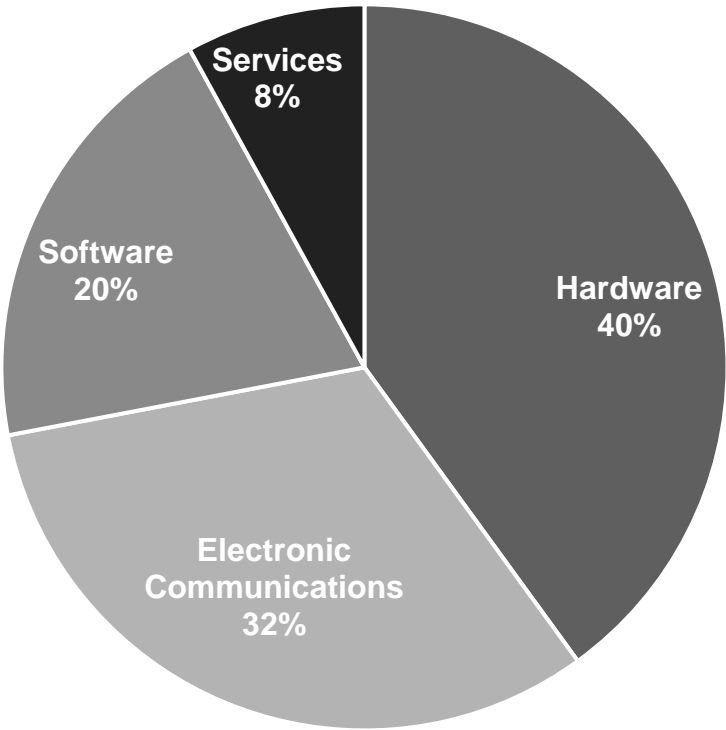
**ICT Market Size**  
(In billion USD)



The drop is due to changing currency rates, although by TRY, it is recorded as an unprecedented average growth of 23% in 5 years

**TURKISH ICT MARKET HAS REACHED USD 25 BILLION MARKET SIZE AND A WORKFORCE OF ALMOST 213K**

**2022 ICT Market Breakdown**  
Shares of Subsectors

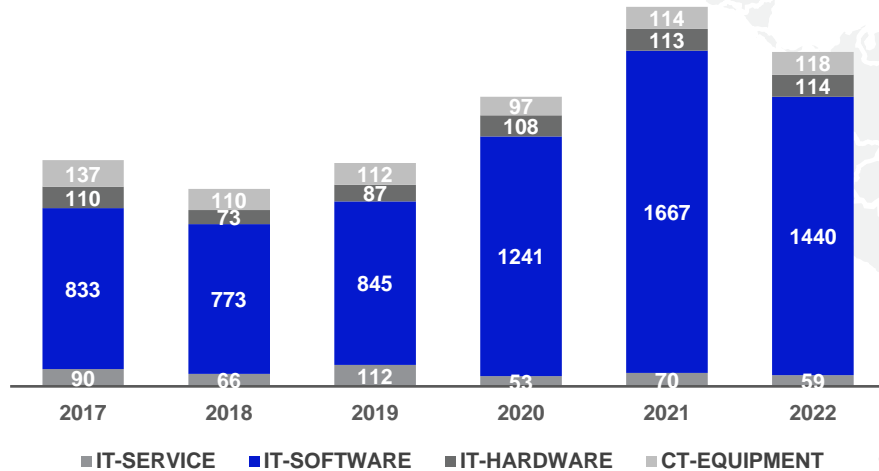


# TURKISH ICT SECTOR OUTLOOK

## FOREIGN TRADE



**ICT Exports**  
Exports (Million USD)



**TÜRKİYE HAS DOUBLED ITS EXPORTS SINCE 2014 - REACHING OVER USD 1.5 BILLION WHILE BROADENING ITS EXPORT MARKETS**

**2%**  
AMERICA

**73%**  
EUROPE

**9%**  
ASIA  
PASIFIC

**17%**  
MIDDLE EAST  
AND AFRICA

# TURKISH ICT SECTOR OUTLOOK


## MAJOR PLAYERS




USD 19 BILLION  
OF  
INTERNATIONAL  
INVESTMENT  
ATTRACTED  
SINCE 2005


OUT OF 213,000 EMPLOYEES  
15% GROWTH RATE

  
**22 %**  
ARE  
WOMEN

  
**49 %**  
HAVE A  
UNIVERSITY  
DEGREE



  
ALMOST  
**70 %**  
ARE YOUNGER  
THAN 35

  
**49 %**  
ARE R&D  
PERSONNEL

THERE ARE OVER  
9,121 COMPANIES  
IN TURKISH ICT  
SECTOR WHERE  
BOTH LOCAL AND  
INTERNATIONAL  
PLAYERS ARE  
ACTIVE

LARGE-SIZED LOCAL  
AND INTERNATIONAL  
COMPANIES IN THE  
ECOSYSTEM

arvento  
Mobile Systems

aselsan

AtoS

DATAMARKET

detaisoft

Ekin

ERICSSON

getir

HAVELSAN

Hewlett Packard  
Enterprise

hp

HUAWEI

IBM

INNOVA

INDEX  
"Türkiye'nin Bilişim Kaynağı"

Insider

intertech

isbak

iyzico  
a PayU company

KAREL

KoçSistem

LOGO

Microsoft

millenicom

NETAŞ

NOKIA

ORACLE

peak

Prysmian  
Group

SAP

softtech

STM

TURKCELL

Türk Telekom

VERIPARK

VESTEL O VODAFONE

# TURKISH ICT SECTOR OUTLOOK

TURKISH ICT SECTOR IS POISED TO FURTHER GROW  
WITH M&As AND NEW ENTRANTS

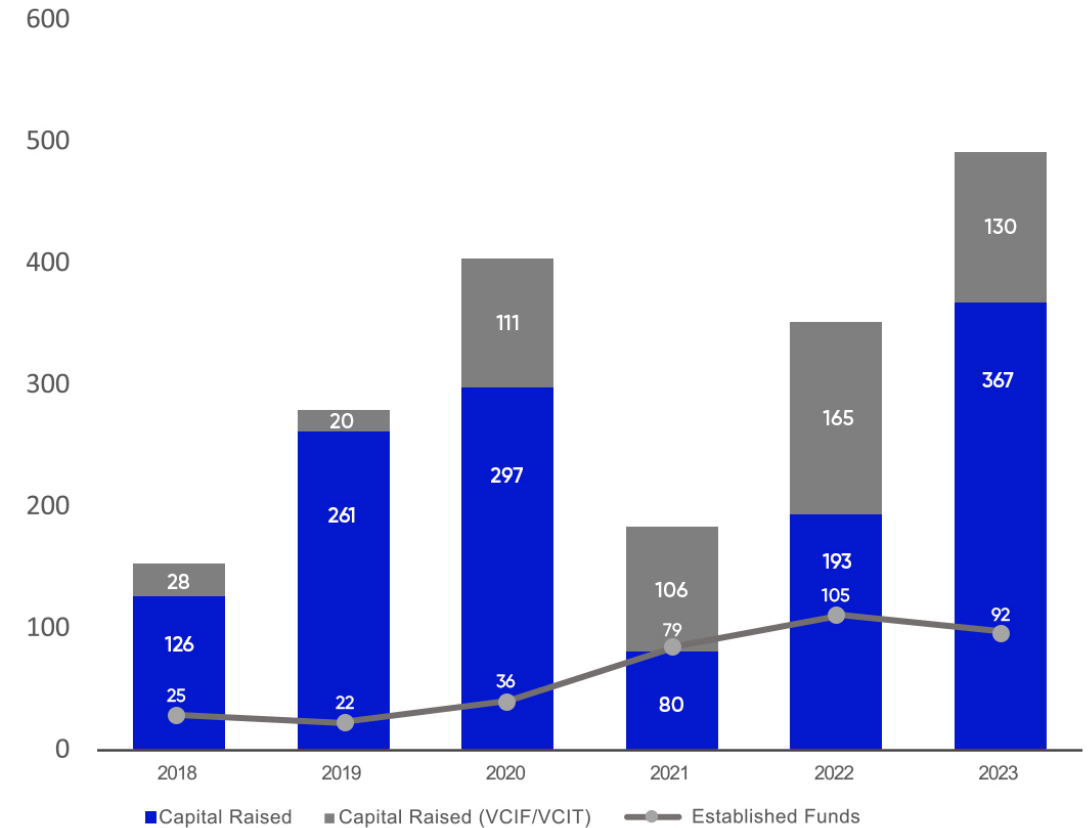
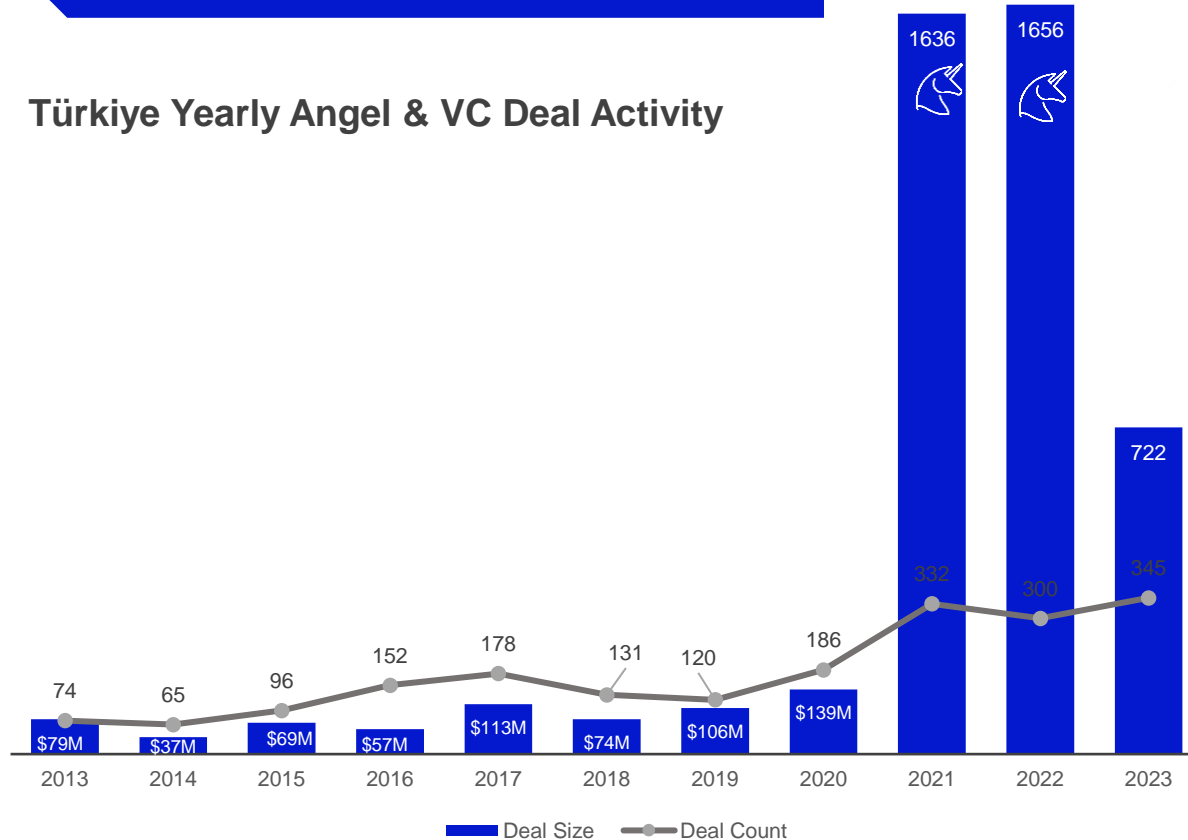


## EARLY-STAGE INVESTMENTS IN ICT COMPANIES IN TÜRKİYE ARE ON THE RISE

The Turkish rapid delivery startup Getir raised its valuation to USD 11.8 billion after raising USD 768 million funding and became the second decacorn of Türkiye.

Trendyol, Türkiye's #1 e-commerce platform, has entered into agreements to raise \$1.5 billion, valuing the company at \$16.5 billion. With this new funding, Trendyol becomes Türkiye's first Decacorn.

### Türkiye Yearly Angel & VC Deal Activity





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## GROWTH DRIVERS IN TÜRKİYE



## ROBUST ECONOMY

TRACK RECORD GROWTH AND BRIGHT  
FUTURE WITH PROVEN RESILIENCE



# 11<sup>th</sup> largest economy in the World

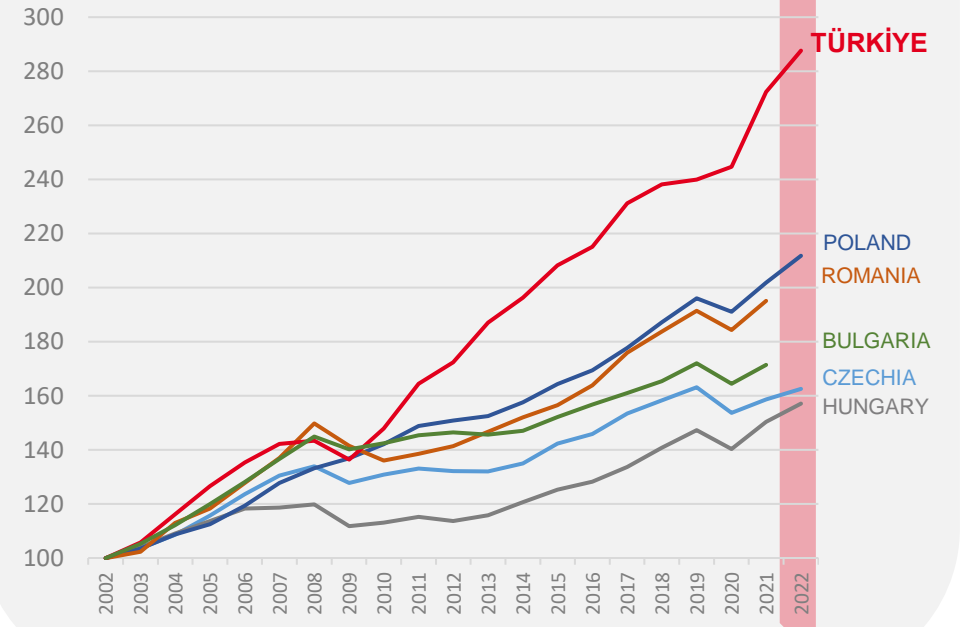
### RANKING OF ECONOMIES BY GDP AT PPP

2003	2019	2022
1. USA	1. CHINA	1. CHINA
2. CHINA	2. USA	2. USA
3. JAPAN	3. INDIA	3. INDIA
4. GERMANY	4. JAPAN	4. JAPAN
5. INDIA	5. GERMANY	5. GERMANY
6. RUSSIA	6. RUSSIA	6. RUSSIA
7. FRANCE	7. INDONESIA	7. INDONESIA
8. UK	8. BRAZIL	8. BRAZIL
9. BRAZIL	9. UK	9. UK
10. ITALY	10. FRANCE	10. FRANCE
11. MEXICO	11. MEXICO	11. TÜRKİYE
12. INDONESIA	12. ITALY	12. ITALY
13. SPAIN	13. TÜRKİYE	13. MEXICO
14. CANADA	14. S.KOREA	14. KOREA
15. S.KOREA	15. SPAIN	15. CANADA
16. S.ARBABIA	16. CANADA	16. SPAIN
17. IRAN	17. S.ARBABIA	17. S.ARBABIA
18. TÜRKİYE	18. IRAN	18. EGYPT

### AVERAGE ANNUAL GDP GROWTH (%) 2002-2022



### REAL GDP GROWTH (INDEX: 2002=100)



## BOURGEONING MIDDLE CLASS

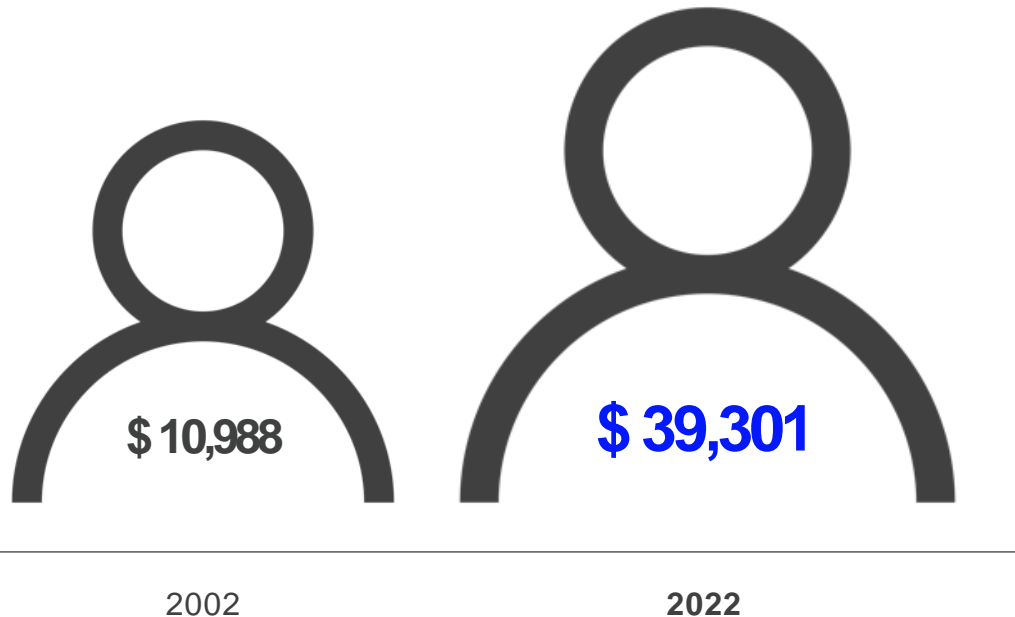
TÜRKİYE'S ECONOMIC GROWTH HAS PAVED THE WAY  
FOR EMERGENCE OF A SIZEABLE MIDDLE-CLASS



Turkish economy has more than tripled over the past 20 years and is promising more growth in future

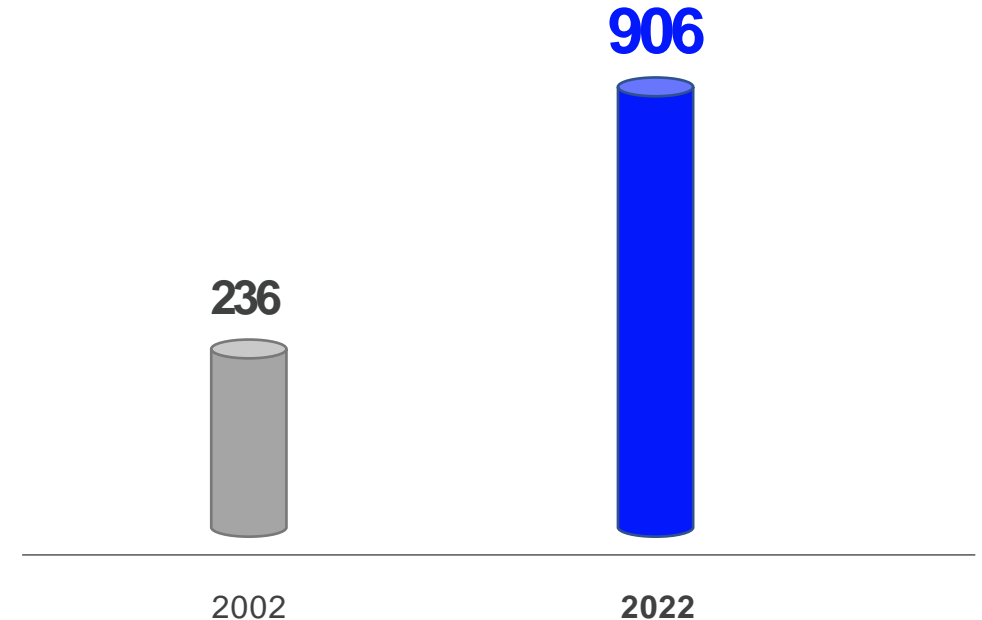
### Tripling Income Per Capita

(GDP per capita at purchasing power parity)



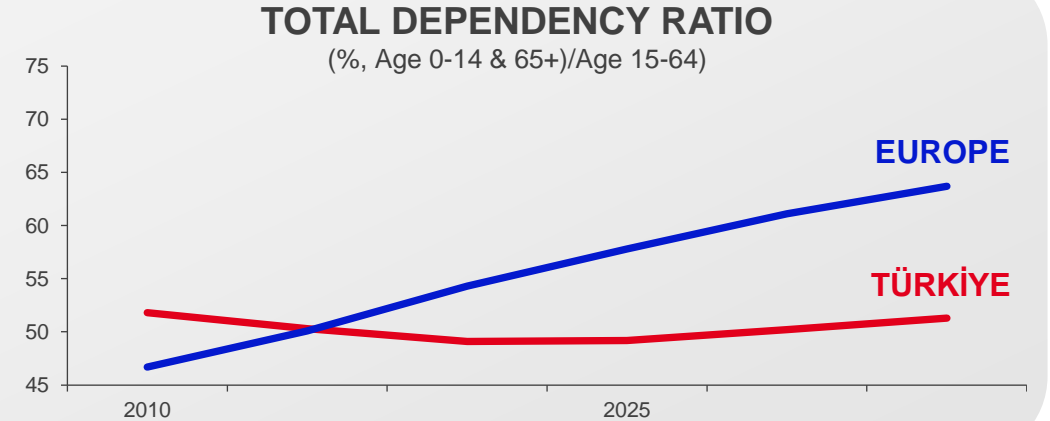
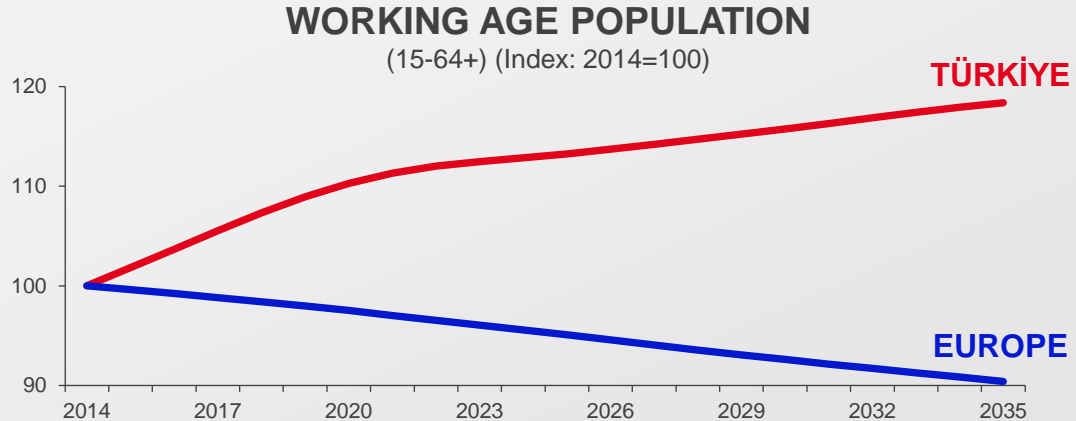
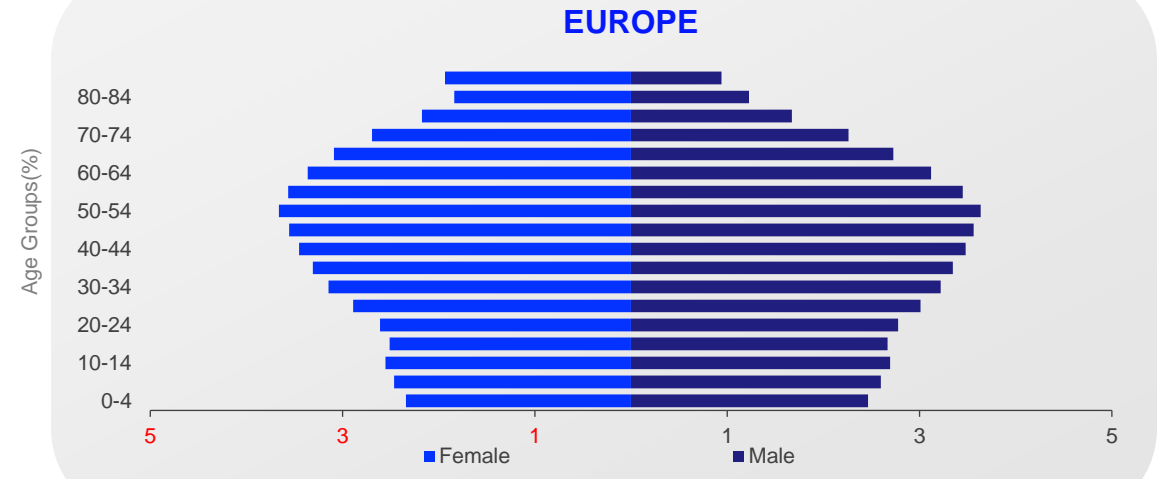
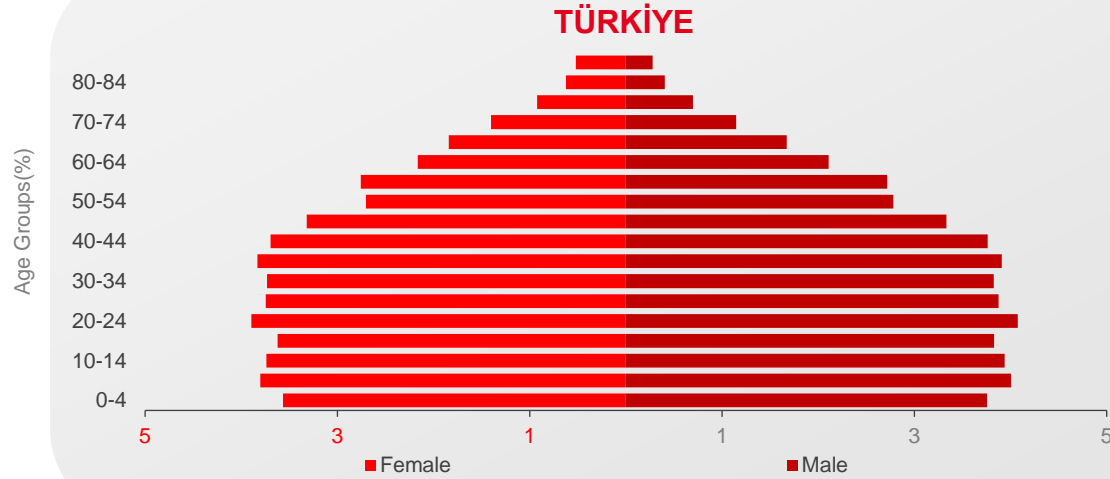
### Turkish Economy

(GDP at current prices, USD Billion)



# FAVORABLE DEMOGRAPHICS

HALF OF POPULATION UNDER AGE OF 33.5 CREATING  
DYNAMIC LABOR FORCE AND FISCAL DISCIPLINE

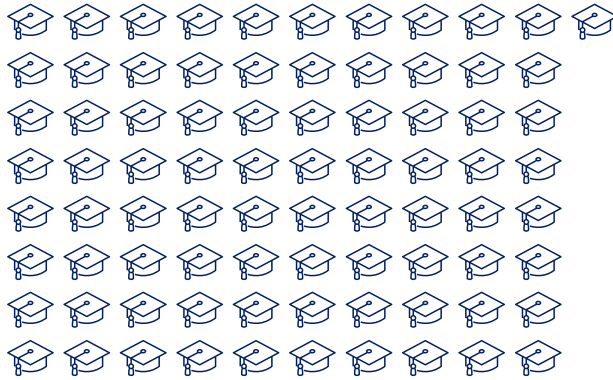


# SKILLED & COST-COMPETITIVE LABOR FORCE

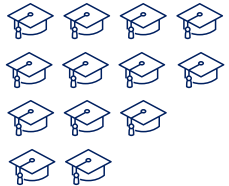
TÜRKİYE'S EDUCATION SYSTEM UPGRADED TO  
OFFER OUTSTANDING ACADEMIC PROGRAMS



## Annual Number of University Grads in ICT & Engineering Fields



**75,520**  
Engineering  
Undergraduate



**12,572**  
Engineering  
Graduate



**10,975**  
ICT Undergraduate



**2,756**  
ICT Graduate

TOTAL

**101,823**

**<> Türkiye**  
**Açık Kaynak**  
**Platformu</>**

Türkiye Open  
Source Platform  
[turkiyeacikkaynakplatformu.com](http://turkiyeacikkaynakplatformu.com)

Ecole 42 offers peer-to-peer, project based, and gamified learning system with a capacity of 800 stations to fill the gap of qualified software developers in digital transformation of manufacturing, finance and communication sectors

**Over 120K**  
professional  
software  
developers  
in Türkiye

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1 million software developer training program has been launched to upgrade country's labor force with regard to its ever-growing digital sectors

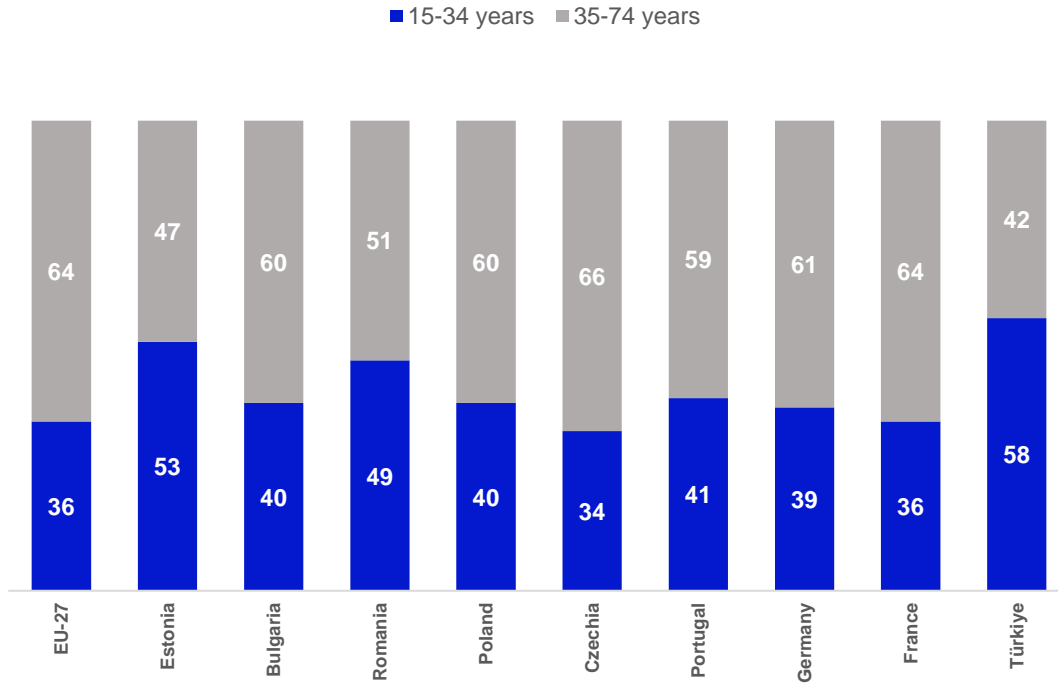


# SKILLED & COST-COMPETITIVE TALENT POOL

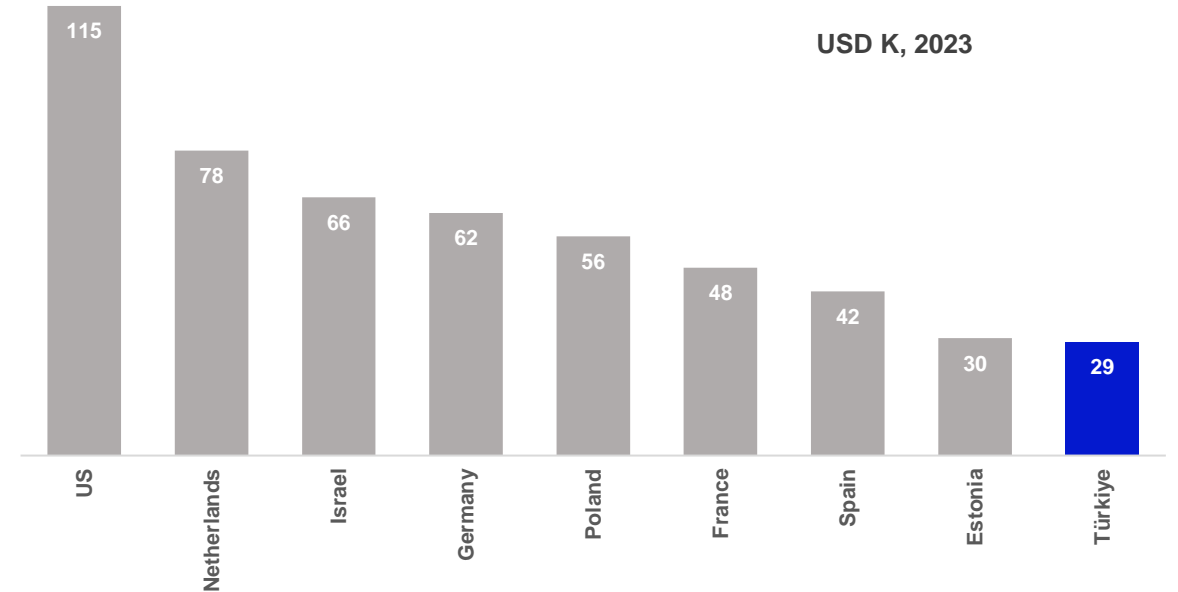
...TO SUPPORT A SKILLED ENGINEERING  
POOL AT COST-COMPETITIVE PRICES



**Distribution of ICT Specialist by Age (%)**  
Distribution of ICT specialist by age, 2022 (%)



**Average Salaries for Software Developers**  
(with 3-5 year experience)

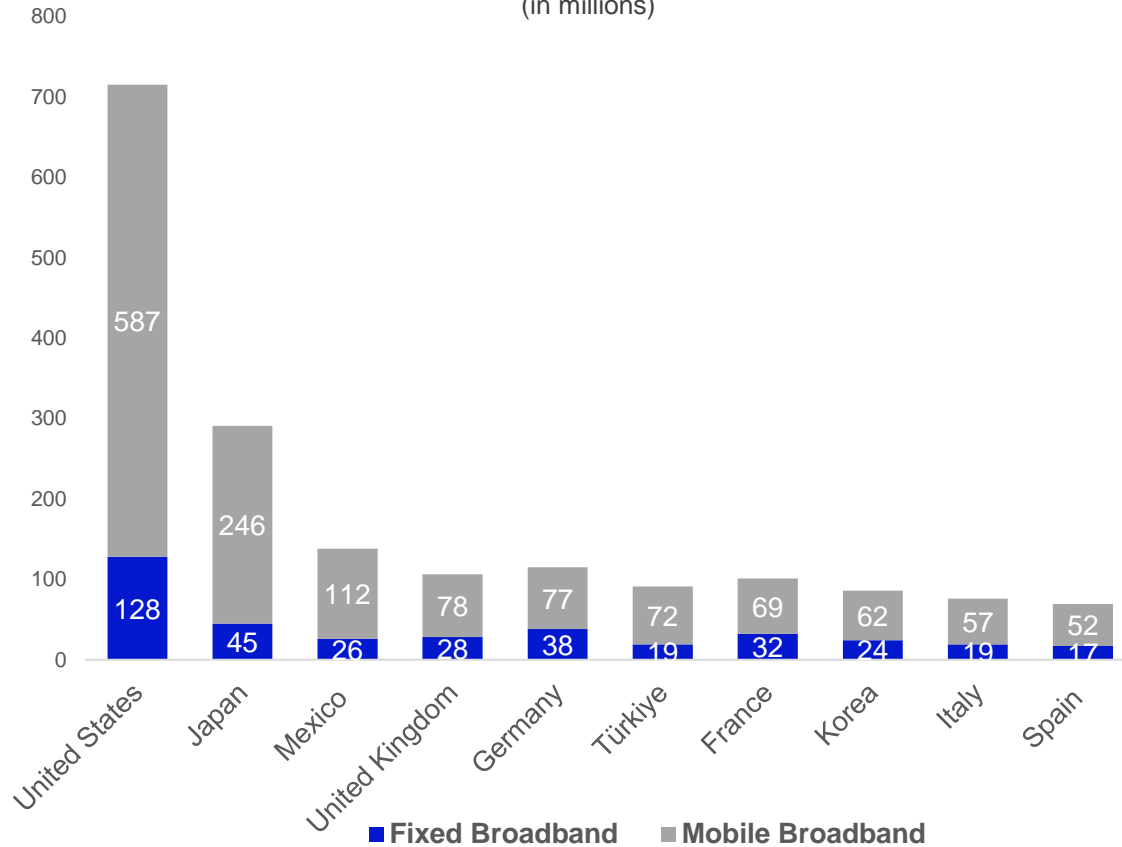


# DATA INFRASTRUCTURE

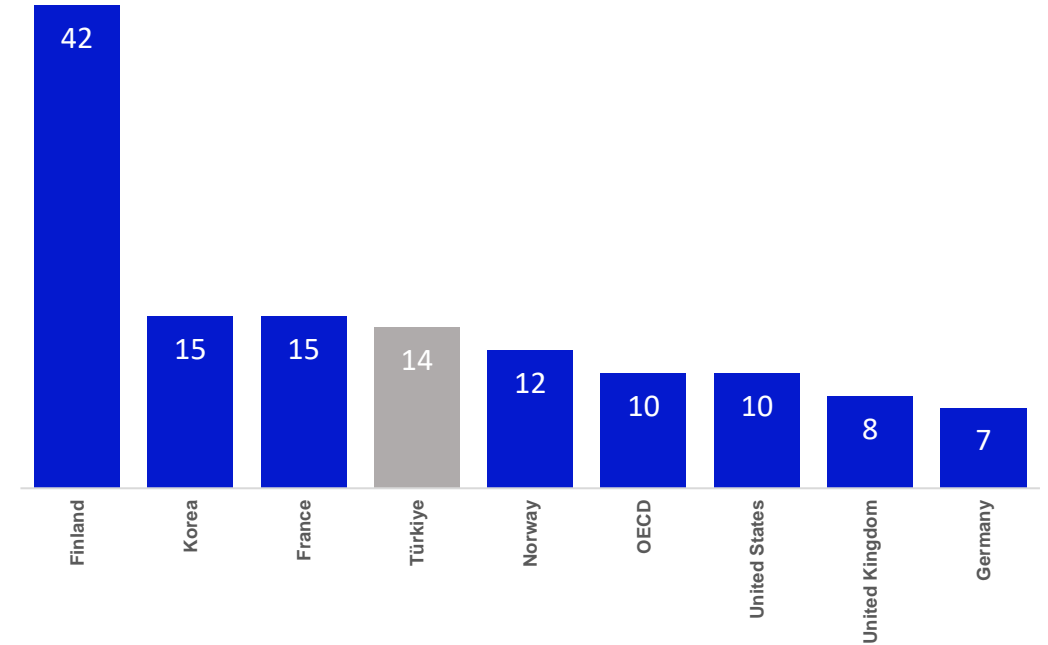
BROADBAND SUBSCRIPTIONS DOUBLED SINCE 2010 TO REACH 91 MILLION, EUROPE'S 6<sup>TH</sup> BIGGEST ONLINE POPULATION



**Fixed and Mobile Broadband Subscriptions**  
(in millions)



**Mobile Data Usage**  
(GB per month, per mobile broadband subscription)



# TECHNOPARKS & R&D CENTERS

## TECHNOPARKS AND R&D CENTERS MAKE IMPORTANT CONTRIBUTIONS TO INNOVATION ECOSYSTEM AND TECHNOLOGY DEVELOPMENT



### TECHNOPARKS

- **87** Technoparks (an additional **13** underway)
- **103K** employment in over **9,736 companies**
- **>1951** companies with academia partnership
- Total export is **USD 10 Billion**



### R&D CENTERS

- **1,298** R&D Centers
- **79K** employment; **18%** in ICT industry
- **18%** international companies



### UNIVERSITIES

- 10 universities in Top 1000; 3 in Top 500 (QS World University Rankings 2024)
- Over 1450 academicians in ICT



# INCENTIVES

## ICT INVESTMENTS AND R&D TAKE PRIORITY AND CAN BENEFIT FROM VARIOUS LUCRATIVE INCENTIVES



### MINISTRY OF INDUSTRY AND TECHNOLOGY MAIN INCENTIVE TOOLS



#### TAX DEDUCTION:

Reduced tax rates for investor's income (50-90%) until the total deduction reaches to a certain percentage of capex. (15-65% of capex, in the case of project-based incentives up to 200% of capex). For R&D investments, all R&D expenditures are deducted from tax base.



#### VAT EXEMPTION:

Investment machinery and equipment imported and/or locally provided within the scope of the incentive certificate will be VAT exempt.



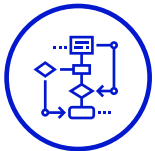
#### CUSTOMS DUTY EXEMPTION:

Investment machinery and equipment imported within the scope of the incentive certificate will be customs duty exempt.



#### INTEREST RATE SUPPORT:

For investment loans, a certain portion of the interest share will be covered by government. (3-7% points for TL-denominated, 1-2% points for forex-denominated loans) (1M-1.8M TRY).



#### LAND ALLOCATION:

Government land will be allocated for the investments, if no land is available in OIZs.

#### Main Incentive Tools

	General Incentives	Regional Incentives	Incentives for Strategic Investments	Project Based Incentives	R&D Incentives
Corporate Tax Reduction		●		●	●
VAT/Custom Duty Exemption	●	●		●	●
Social Security Premium Support		●		●	●
Income Tax Withholding Support*	●	●		●	
Interest Support**		●			
Land Allocation		●	●	●	
Qualified Personnel Support				●	
Infrastructure Support				●	
Energy Cost Support				●	

\*Provided that investments, except R&D, are made in Region 6,

\*\*Provided that investment, except R&D, are made in Regions 3, 4, 5 or 6 within the frame of the Regional Incentive Scheme

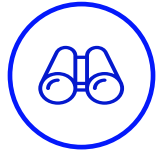
# INCENTIVES THROUGH INNOVATION LIFECYCLE

COMPREHENSIVE INCENTIVES PROGRAM WITH A WIDE RANGE OF INSTRUMENTS HELPS TO ACCELERATE THE RETURNS ON R&D INVESTMENTS



## START:

**Technostartup Incentives:**  
Cash support up to 900K TRY



## PRODUCT / PROJECT DEVELOPMENT

**TUBITAK programs:**  
Cash support up to 60-80% of the project budget

**Industrial PhD Fellowship Program:**  
Grants for PhD research scientist employed in private sector



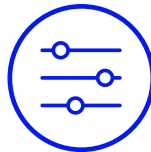
## COMMERCIALIZATION

**Technoparks and R&D Centers:**  
Income Tax Exemption  
Tax cuts up to 20-30% of the personnel cost



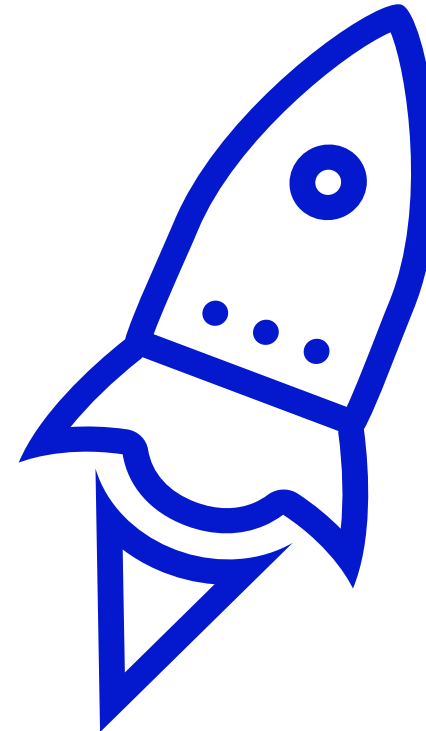
## MANUFACTURING

**Technology Focused Industrial Movement Program (HAMLE) Incentives:**  
Cash/credit support up to 5 Million TRY for SMEs



## GROWTH & COMPETITION

**Patented sales:**  
Income Tax & VAT Exemption



ANGEL INVESTORS ARE EXEMPT FROM INCOME TAX BY 80-100% AT THE AMOUNT OF THEIR INVESTMENT



TÜBİTAK

# 1514 VC

**Support Program is launched to support the VC ecosystem in Türkiye**



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# OPPORTUNITIES IN TURKISH ICT SECTOR

## OPPORTUNITIES IN SUB-SECTORS

TÜRKİYE OFFERS SOLID FUNDAMENTALS FOR  
PROFITABLE INVESTMENTS IN THE ICT SUBSECTORS



TELECOMMUNICATIONS



E-COMMERCE



FINTECH



GAMING



CLOUD &  
DATA CENTER



DIGITAL  
TRANSFORMATION



DATA ANALYTICS & AI



PUBLIC  
INVESTMENTS &  
E-GOVERNMENT



ICT IN  
MOBILITY



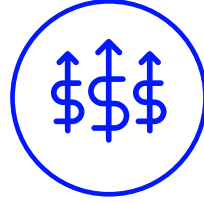
ICT IN  
HEALTHCARE

# TELECOMMUNICATIONS

TÜRKİYE'S TELECOM MARKET HAS REACHED TO 213.9  
BILLION TRY - USD 12.9 BILLION IN 2022



Strong growth of the market – doubled to **213.9 Billion TRY** in the last 5 years



Growing export - **USD 118 Million in 2022**



Fixed and mobile broadband subscriptions in Türkiye have exceeded **94.3 million** in 2023



**549k km** of fiber - optic with 6.5 million subscribers (as of 2023 Q3)



A high mobile / smartphone penetration rate of **75%**



Strong ecosystem with local and international players with a total of **42K employees**



# 5G AND BEYOND



## 5G WILL SHAPE ALL VERTICAL SECTORS



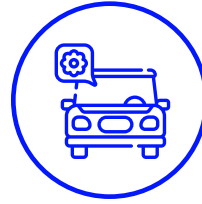
ENERGY



MANUFACTURING



HEALTHCARE



AUTOMOTIVE



TRANSPORTATION



FINANCE



Milat Network Management and Analysis System, which is the national and domestic network management infrastructure, is now in use.

**Ulak is now developing 5G Core Network Development project Çınar.**



5GTR Forum established to develop products, services and technologies that will take place in domestic and international market in next generation communication systems



**Nokia** has a partnership agreement with Karel, Turkish electronic manufacturer, to produce 4.5G and 5G base stations in Türkiye. Local manufacturing of Nokia base stations started in 2022



**5G@EndTech acceleration program** in collaboration with the Investment Office, KOSGEB, TÜBİTAK, Arçelik, Nokia, and Türk Telekom, aims to support the commercialization and globalization processes of 5G-based enterprises in Türkiye.



**5G Valley Open Test Bed** created to be a platform for **R&D and Product development opportunities** for public, university, operator, and industry collaborations that work on 5G and Beyond Technologies



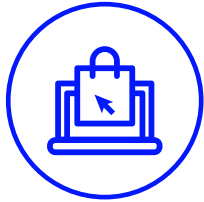
**Ericsson Türkiye Research Laboratory**, within the scope of TÜBİTAK's 1515 - Support Program for Frontier R&D Laboratory Support Program, carries out innovative studies in the field of **5G, IoT and 6G technologies.**



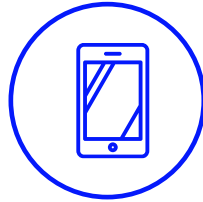
**End to End Domestic and National Communication Network Project** carried out by 16 members of Communication Technologies Cluster and 3 operators

# E - COMMERCE

TÜRKİYE'S E-COMMERCE MARKET HAS REACHED  
800.7 BILLION TRY IN 2022



E-commerce market in Türkiye continues to grow with **an annual growth of 109%**, reaching **TRY 800.7 Billion**



Fixed and mobile broadband subscriptions in Türkiye have reached a **total of 93.1 million** in 2022 - an of **116%** impressive penetration rate



Enhanced use of internet and incremental number of online shoppers' rate of **49.5%** - a population of **28.4 Million**



Potential in mobile phone shopping - a mobile shopper's rate of **53%**, which is higher than that of **USA, UK, Spain and Brazil**



**Türkiye is home to global e-commerce giants** and received many international investments



Sales of e-commerce and online market applications **skyrocketed by 300%** amid coronavirus outbreak- the number of





# FINTECH

TÜRKİYE IS TRANSFORMING INTO A FINTECH HUB,  
WITH OVER 665 COMPANIES AND AN ONLINE  
PAYMENT MARKET OF OVER USD 50 BILLION



A strong banking system with an educated workforce



Europe's biggest credit and debit card market – **400 million** (as of December 2023)



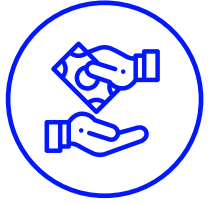
Total amount of card payments at around **USD 359 Billion** (in 2023)



Remote and Digital Customer Acquisition has been enabled for Banks and FinTechs.



The Instant and Continuous Transfer of Funds (FAST) System has made it possible to initiate instant retail payment service available 24/7



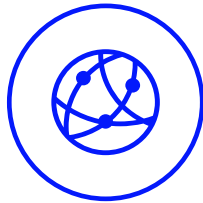
Legislation for Account Information Service(AISP) and Payment Initiation Service (PISP) enacted within the scope of open banking applications in line with the PSD 2 of EU



Share of online payments is 28% with around **USD 100 Billion**



Türkiye's strategic location within a 4-hour flight distance from **London** and **Dubai**



Türkiye's vision of turning Istanbul into a regional finance center



Digital banking license issued for the 6 Fintechs (as of October 2023)



Equity-based crowdfunding applications are available- 12 platforms registered (as of September 2023)



104 Million active user base in digital banking platforms

# FINTECH

**fintechtime.**

TURKISH FINTECH ECOSYSTEM



# GAMING

## TÜRKİYE'S GAMING MARKET HAS PASSED USD 900 M IN 2022



Total generated game revenue in 2022 is

**USD 625 Million**

**USD 275 Million** in mobile

**USD 350 Million** in PC/Console

**30<sup>th</sup>** highest in global revenue

Digital gamers exceeded **44M+**

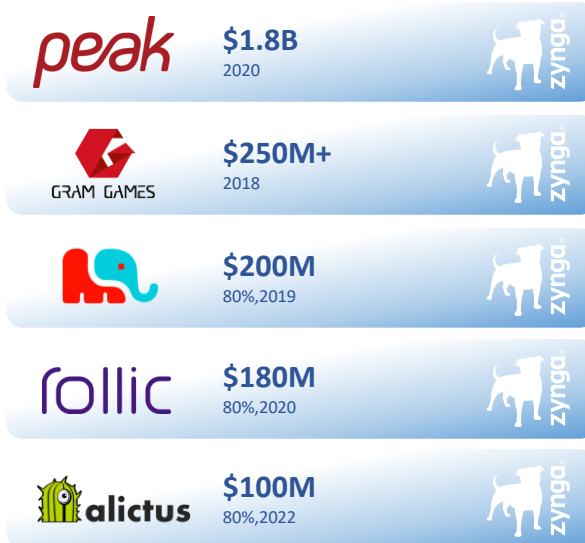


An ecosystem that consists of over **740 large & small companies** including indies -



Game startups recently received notable investments  
Spyke (**\$55M**), Libra Softworks (**\$30M**), Ace Games (**\$25M**) Metaverse (**\$10M**)

### TOP GAMING EXIST IN TÜRKİYE



### TOP 5 EUROPE CITIES FOR GAMING



# CLOUD & DATA CENTER

TÜRKİYE'S PUBLIC CLOUD MARKET HAS REACHED  
USD 482 MILLION IN 2022



Public cloud market in Türkiye is **USD 482 Million** in 2022, expected to double in next few years



Robust terrestrial **fiber** and **submarine cable** connectivity with international networks



There are 38 **Tier III** and **Tier IV** data centers



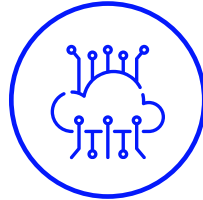
Regulation requires data systems for telecom companies and banks in the country



14% of SMEs in Türkiye use cloud computing services whereas this ratio increases to **40% for large size companies** (with >250 employees)



A total of **100,000m2** white space is estimated – **60K white space** capacity in Marmara region and 30K in Ankara



Data center investments are incentivized - lower energy costs, fiber optic infrastructure, land etc.

Data Centers run by Telecom Operators - **54K m<sup>2</sup> white space**

**536 km**  
Fiber length

## VoD (Video-on-Demand) Market in Türkiye

- Türkiye remains MEA market leader, with USD 535 Million in SVOD revenue in 2023, it is expected to show 7.19% CAGR resulting in a projected market volume of USD 733M by 2027
- Netflix, Amazon Disney+** in the market as well as Turkish VoD platforms like Tabii, BluTV, Exxen, TV+, PuhuTV and Gain
- Turkish content is widely popular in Eastern Europe, Middle East and Latin America - amounts for 25% of all TV show transactions around the world



# AI AND DATA ANALYTICS



**Türkiye Open Source Platform**  
500,000 software developers training program initiated to achieve worldwide scaled products



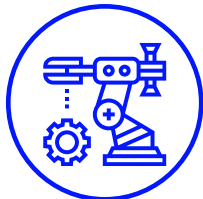
Artificial intelligence (AI) and machine learning (ML) incorporated into Cloud services utilized for smart automation and predictive analytics



TÜBİTAK Artificial Intelligence Institute plays a critical role as a catalyst for advance research in the development of start-up networks and



**Financial services sector** is the pioneering industry for the exploitation of AI applications followed by retail



Machine learning is the most preferred AI tool for Turkish companies followed by data analytics and artificial neural networks



66 Turkish startups with published patent application in the field of AI and Data Analytics



9,409 indexed publications made Türkiye #16th globally in AI publications

Over 1,200 Academicians with research areas in AI

Top-notch universities offering undergraduate and graduate programs that focuses on the field of AI.

TUBITAK provided 1.7 billion TRY financing to over 1,700 R&D and Innovations projects in the last 10 years-

Digital transformation of Industry, Digital transformation in commerce and Smart living and health were the most supported verticals





# CYBER SECURITY

CYBER SECURITY MARKET IS USD 345 MILLION IN 2023, EXPECTED TO SHOW 12.68% CAGR RESULTING IN A PROJECTED MARKET VOLUME OF USD 630M BY 2027



## TUBITAK Research Technologies & Solutions

Institute carries out innovative solutions in the field of Data Leakage Prevention, Centralized Cyber Threats, Cyber Space Trap, Penetration Tests, Risk Analysis, Malware Analysis, Vulnerability Analysis

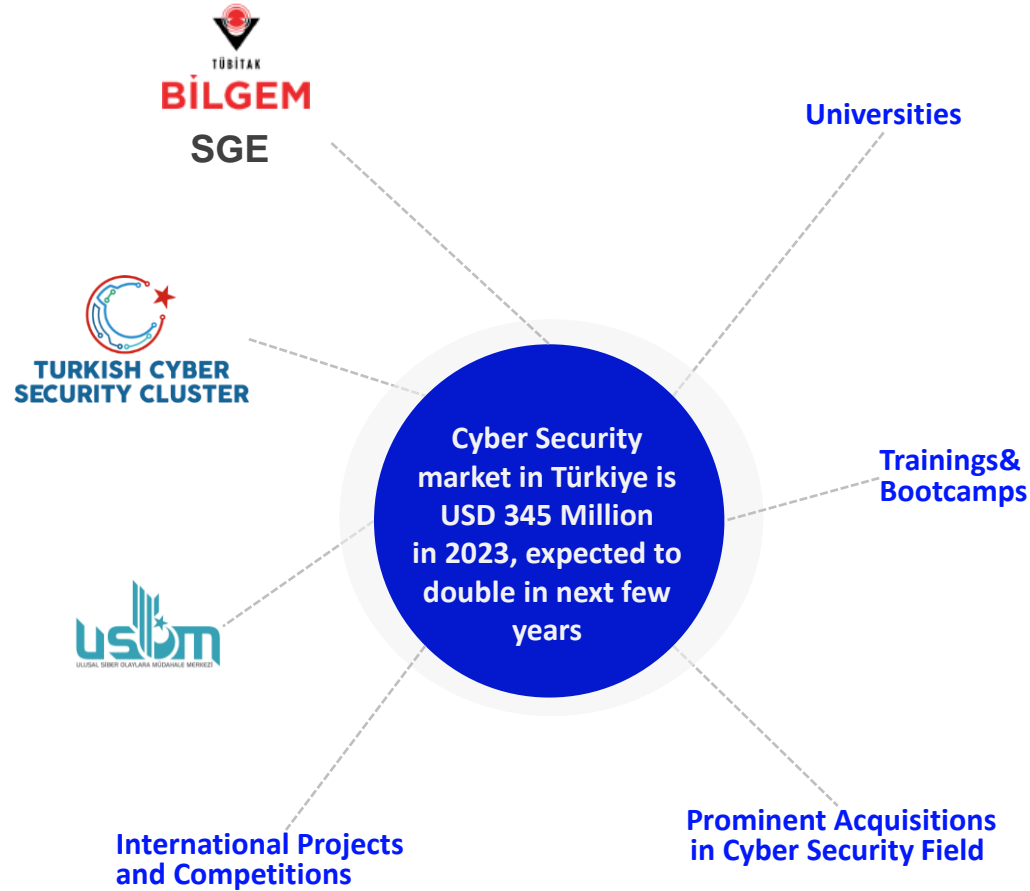
Established in 2017 to develop the ecosystem with the contribution of all public agencies, academia and private sector representatives under the leadership of the Presidency of Defense Industries.

## National Cyber Security Incident Response Team

There are over **2200** CSIRTs and over **6500** cyber security professionals in nearly every sector in Türkiye that coordinate with TR-CERT regarding cyber incidents



STM beats out several rivals to secure one of the largest software development projects on **NATO's** intelligence infrastructure



## Cyber Security MA/PhD Programs

Top-notch universities offering undergraduate and graduate programs cyber security and informatics.

Ankara, Ege, Gebze Technical and Istanbul Technical Universities launched 4 new cyber security vocational schools to meet ever-growing demand for cyber talent.

## Private Sector Trainings:



THY Cyber Take Off



Picus Cyber Talent Academy



Patika Cybersecurity Bootcamp





### NATIONAL AI STRATEGY OBJECTIVES

#### Human Capital

Training AI Experts and Increasing Employment in the Domain



- Employment in the field of AI will be increased to 50,000 people.
- The aim is to hire 1,000 people for AI related roles in central and local government institutions
- The number of graduate-level diploma holders in the field of AI will be increased by 10,000.
- The number of academicians working in the field of AI will be increased to 5,000.
- It will be ensured that the number of postgraduate theses on social and technical fields of AI is at least 1,000.

#### Infrastructure

Facilitating Access to Quality Data and Technical Infrastructure



- It will be ensured that the number of public institutions and enterprises providing access to common high performance computing infrastructures will be at least 200.
- At least 50 institutions will be included in the Public Data Space.
- At least 10 sectoral cloud platforms for data sharing will be established.
- The number of individual AI project developers will be increased to at least 1,000 within Türkiye Open-Source Platform.
- At least 1,000 open datasets will be shared via the Open Data Portal.

#### International Cooperation

Strengthening International Cooperation



- Participation in at least 100 cross-border project calls in AI will be ensured.
- At least 2 Türkiye-oriented international reports will be conducted in the field of Trustworthy and Responsible AI.
- At least 10 international competitions and project calls will be launched in the field of AI.

#### AI Ecosystem Supports

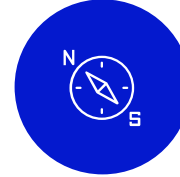
Supporting Research, Entrepreneurship, and Innovation



- It will be ensured that the ratio of AI R&D expenditures to total R&D expenditures is at least 15%.
- The number of start-ups in the field of AI will be increased to 1,000.
- Public procurement will prioritize commercializing developed AI solutions.
- The objective is to create 5 AI tech spin-offs from public institutions and companies.
- At least 1 global initiative will be established in the field of natural language processing.
- The goal is to start 10 pre-competitive AI projects with a focus in image processing.

#### Socioeconomic Adaptation

Regulating to Accelerate Socioeconomic Adaptation



- It will be ensured that at least 20 start-ups benefit from the regulatory sandbox.
- At least 10 sociotechnical research projects will be conducted in AI.
- Research on brain drain and reverse brain drain in AI will be published on a yearly basis.
- AI education workforce surveys will be published on a yearly basis.
- 1 million people annually to benefit from shared digital content for promotional and information

#### Structural Transformation

Accelerating Structural and Labor Transformation



- At least 40 projects will be developed in the Public AI Ecosystem.
- At least 100 projects will be developed in Sectoral Co-Creation Laboratories.
- Target: At least 100 organizations will use Public AI-as-a-Service Platform.
- Implementation of AI maturity model and project management guidelines in 150 organizations.
- Awareness training will be provided to 50,000 central and local government employees.
- At least 250 municipalities will actively use AI technologies in smart city applications.
- At least 100 AI applications that receive the **Trustworthy AI Seal** will be released.



### DIGITAL TÜRKİYE PROGRAMME



#### INFRASTRUCTURE

Improving data communication infrastructure

- 1 Gbps speed for 100% of industry zones and technology development zones
- Attendance to international studies on data communication standards
- Development of a national industrial cloud platform



#### TECHNOLOGY

Development of education infrastructure and raising qualified workforce

- Technology Roadmaps for Focus Technologies (Cloud, Big data, AI, Autonomous Robots etc.)
- 50 Applied Research Centers for Focus Tech
- 60K R&D personnel in Focus Technologies
- 2500 Digital Innovation Projects in R&D Centers
- 250 patents in Digital Technologies



#### USERS

Supporting digital transformation of the industry

- 10 Digital Transformation Centers
- 81 Digital Transformation Information Centers
- 500 Consultants on Digital Transformation of the industry
- 7000 Companies to benefit from Transformation Centers
- 2500 Companies to develop high digital expertise



#### SUPPLIERS

Supporting local technology suppliers

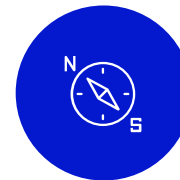
- 1000 medium and large sized digital technology suppliers
- USD 1Billion capital investment for technology firms
- 10 Digital Technology Excellence Centers



#### HUMAN CAPITAL

Development of education infrastructure and raising qualified workforce

- 100 Thematic Technical Colleges
- 400 Digital Technology High School Teachers
- 100K Digital Technology High School Graduates
- 5K PhD Graduates in Digital Technology
- 30K PhD Students in Digital Technology
- 50 Continuous Education Centers in Digitalization
- 10K Companies to attend Digitalization Trainings
- 300K workforce to gain digital competence
- 1 M software developer training program



#### GOVERNANCE

Improving corporate governance

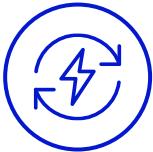
- Digital Transformation Platform to include all stakeholders
- Committees on education, data communication standards and focus technologies to be established



**Digital Transformation Office of Türkiye** was established in 2018 to coordinate the digital transformation of the Turkish government, as well as develop strategies and oversee projects in **cyber security** and **AI**.



**Public ICT investments** have reached a total of \$7.9 Billion since 2002 – \$890M in 2023



**Education, transportation-communication and energy** with **larger shares**



**'Infrastructure Development in Residential Areas without Mobile Communication Infrastructure'** and **'Hardware- Infrastructure Expansion Project for Big Data'** comprehensive projects has the highest share in public ICT investments in 2023

### Selected e-government services provided for businesses:

#### Start and grow

- Centralised Corporate Body Information System (MERSIS)
- Registration of a new company
- Commercial business and company interrogation
- Intellectual property rights
- Submission of data to statistical offices

#### VAT and Customs

- VAT declaration, electronic payments
- Corporate tax

#### Staff

- Social contribution payments for employees
- National council on occupational safety and health web portal

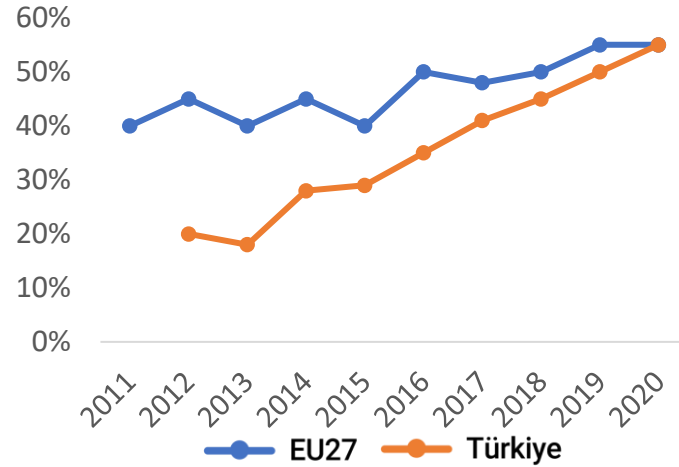
**Public Contracts - eProcurement**  
**eMunicipality Information System**  
**Environment related permits**

# E-GOVERNMENT

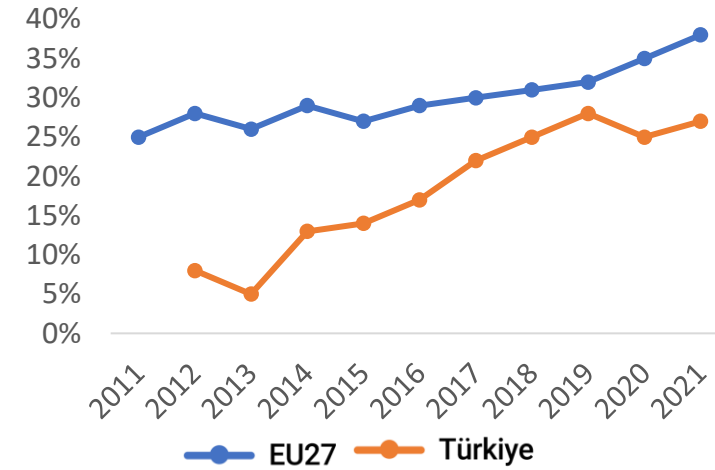
THE DIGITAL TÜRKİYE PORTAL HAS REACHED OVER 64.5 MILLION USERS AND CURRENTLY, MORE THAN 7,800 SERVICES PROVIDED BY 1,028 INSTITUTIONS



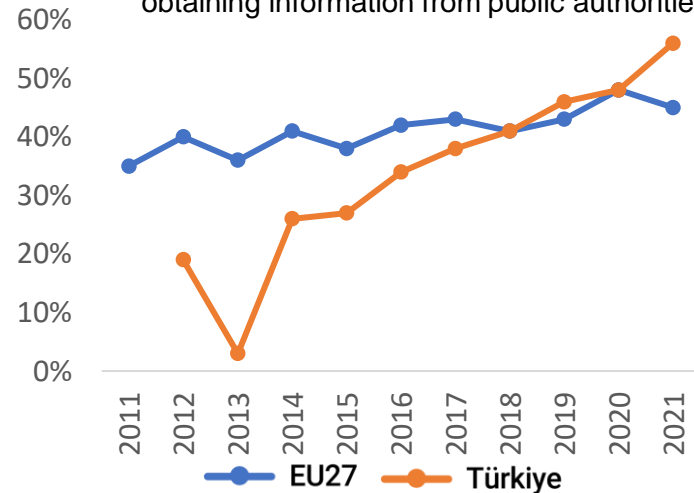
Percentage of individuals using the internet for interacting with public authorities



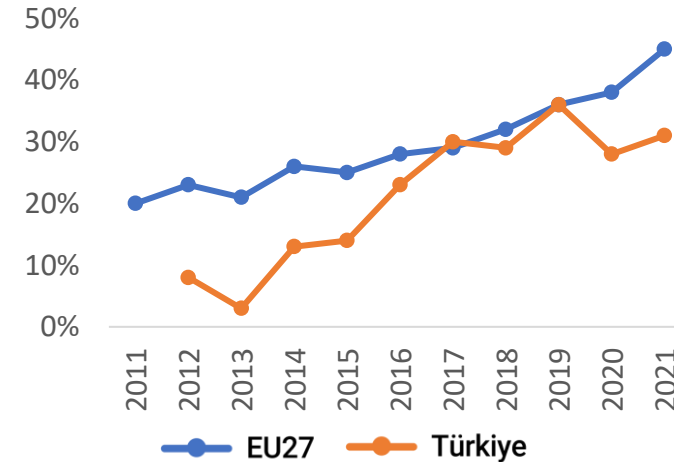
Percentage of individuals using the internet for downloading official forms from public authorities



Percentage of individuals using the internet for obtaining information from public authorities

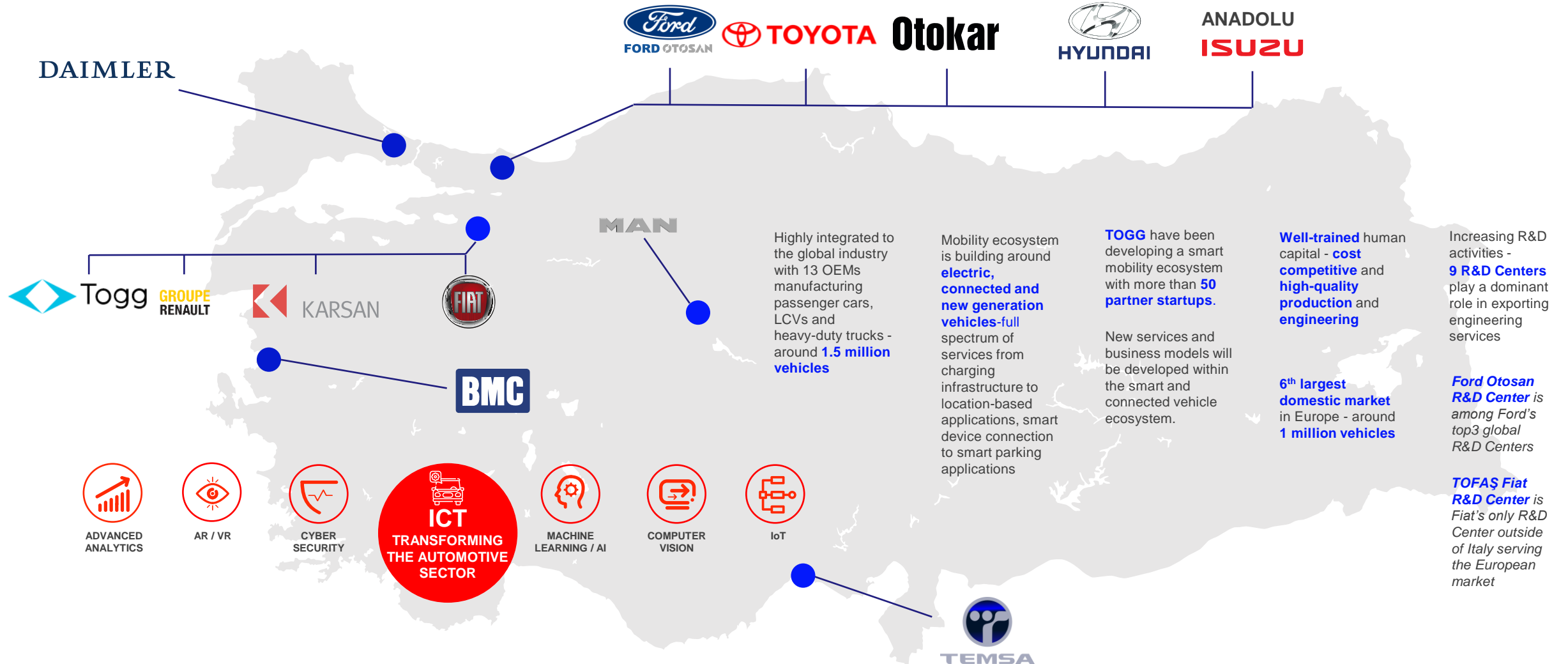


Percentage of individuals using the internet for submitting completed forms to public authorities



# ICT IN MOBILITY

TÜRKİYE IS A MANUFACTURING AND ENGINEERING CENTER IN AUTOMOTIVE AND ALREADY AN EXPORT HUB FOR THE EUROPEAN AUTOMOTIVE INDUSTRY







### Smart Living Solutions

As a platform for users to earn, travel, entertain and continuously develop with collaborations, **Trumore** will provide a personalized, smart, empathetic and seamless user experience. Plug and Play- will support more than **30 Start-ups** working smart life solutions in smart cities



### Data Driven Business Models

**Trumore** will provide personalized socially interactive experiences like payments, digital asset rewards for review, personalized routes, device sharing through Togg ID

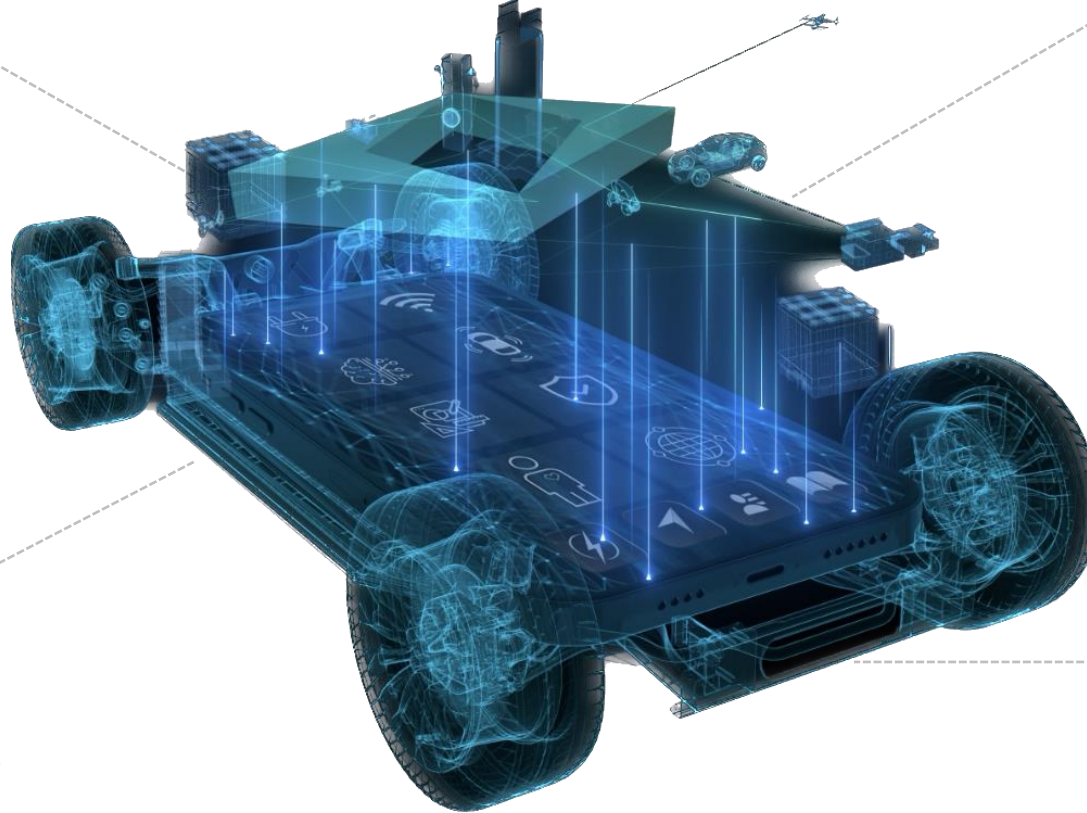
### New Mobility Services

In partnership with **Ava Labs** will enable use cases like Smart Device Passport, service history, valuable part tracking, carbon footprint and emission record, and supply chain authentication via smart contracts



### Smart Energy Solutions

Secondary Cell- V2V charging System  
**Trugo** - Ultrafast Charging Network fed by 100% renewable energy tracking with the blockchain technology



# HEALTTECH ECOSYSTEM

TÜRKİYE IS A HUB FOR HEALTTECH ECOSYSTEM  
LEVERAGING THE DEPTH, VARIETY AND QUANTITY  
OF DATA ACUMULATED IN THE NATIONAL HEALTH  
INFORMATION SYSTEM (NHIS) WITH 1 BILLION+  
EXAMINATION IN HEALTH INSTITUTIONS PER YEAR



## National Health Information System (NHIS)

The National Health Information System of TÜRKİYE (NHIS) is a nation-wide infrastructure for collecting and to some extent sharing patients' Electronic Health Records (EHRs) since 2009.



It is a personal health record system where you can manage all your health information, regardless of where your examinations and treatments are conducted, and where you can access your medical background from one place.



SPREAD OF DIGITAL  
HEALTH SERVICES  
MOTIVATED BY THE  
GOVERNMENT'S AMBITIOUS  
HEALTH TRANSFORMATION  
PROGRAM IS PAVING THE  
WAY FOR HUNDREDS OF  
HEALTTECH VENTURES

## Public & Private Telemedicine Platforms

Ministry of Health  
Tele-medicine  
System



callendoc



Klinik



albert

evital

## Family Medicine Information System



PHARMACEUTICAL  
TRACK&TRACE SYSTEM

## National Health Data Dictionary

The Pharmaceutical Track Trace System's (ITS) aim is to provide drug safety and prevent counterfeiting. System follows the supply chain from the production/importation to the end user - SINCE 2012.

## AGENDA

# 5



- 1 Executive Summary
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- 5 Start-up Ecosystem**
- 6 Success Stories

## START-UP ECOSYSTEM

# STARTUP ECOSYSTEM

ISTANBUL has been ranked **16<sup>th</sup>** the top 25 Ecosystems & takes the **#1** spot in the Strong Starters ranking thanks to a **60%** increase in early-stage deal count and **35%** increase in early-stage deal amount

## BILLION DOLLAR CLUB



\$2.75B, Series C

hepsiburada.com

\$3.8B, IPO



\$1.2B, Series D



\$11.8B, Series E



\$1.8B, Acquisition

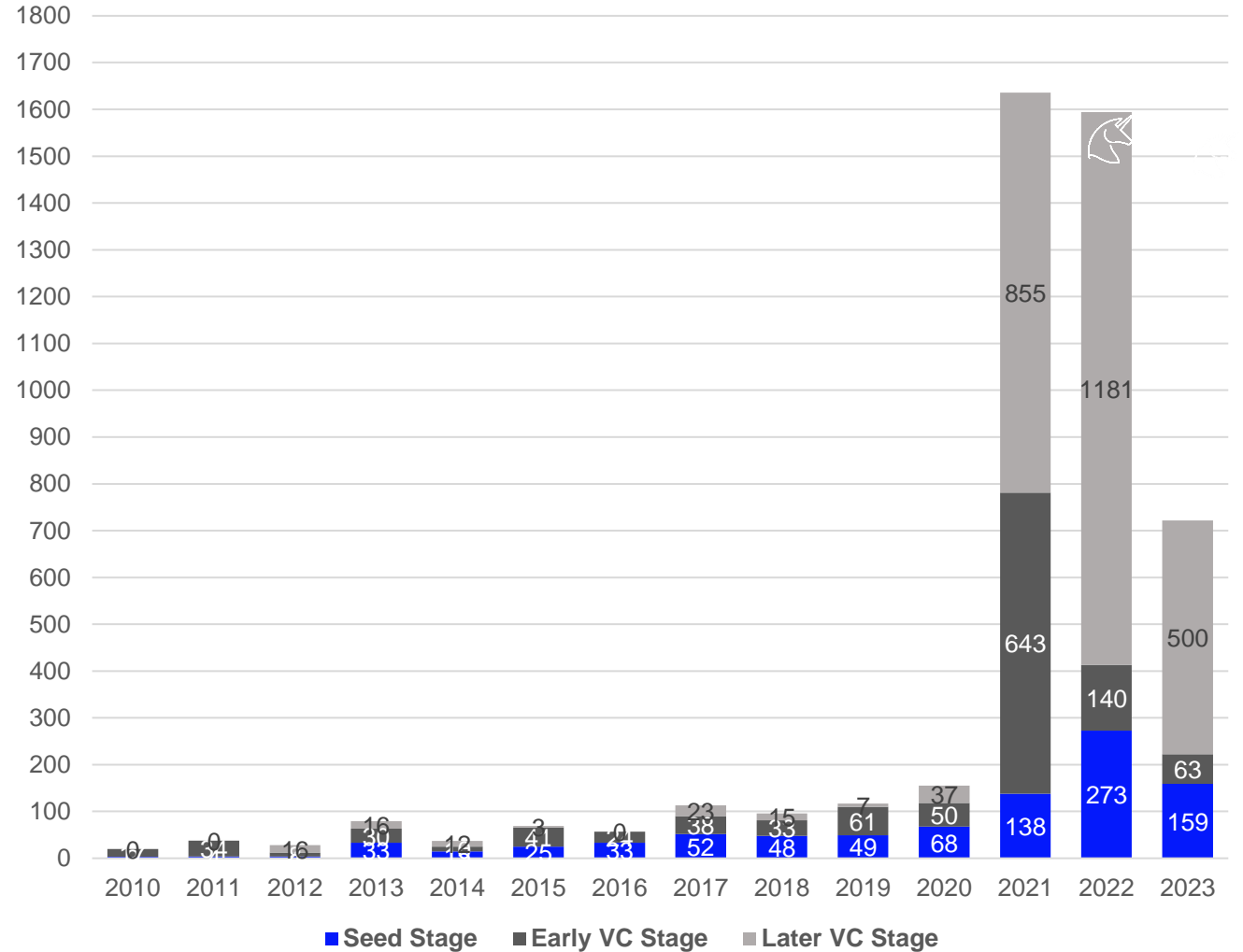


\$16.5B, PE



## Angel & VC Deals

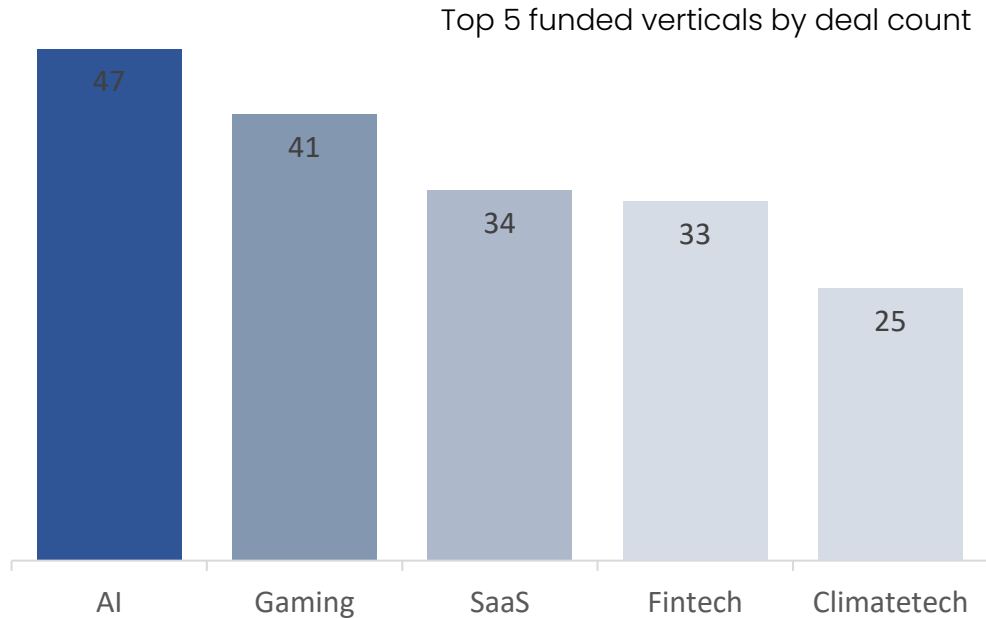
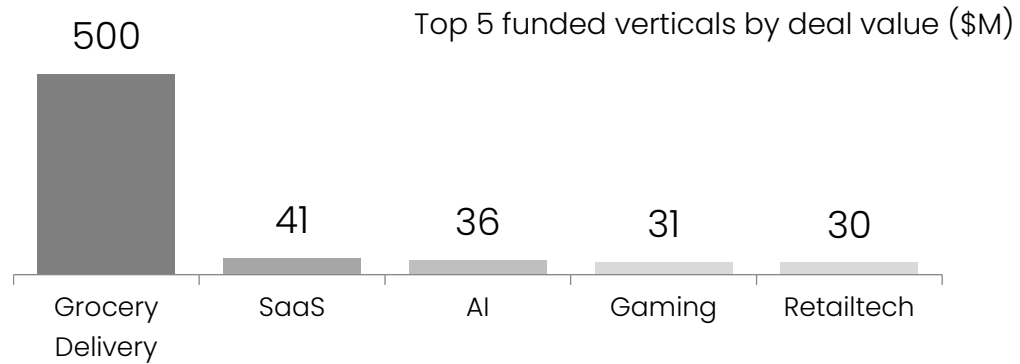
Millions USD



# STARTUP ECOSYSTEM



## Most Funded Verticals in 2023



## Acquisitions by Turkish startups in 2022-2023



# WOMEN ENTREPRENEURSHIP IN TÜRKİYE

In 2023, 70 out of 325 investments were made to startups with female founders



hepsiburada.com

peak

trendyol.com

Insider



Women Entrepreneur Support Program planned and implemented by KOSGEB



**Arya VC**, established in partnership with Arya Women Investment Platform and Türkiye İş Bankası, aims to fund gender-balanced early-stage ventures operating in Türkiye.



**EBRD** allocated €600 million loan to Denizbank, Halkbank, Türkiye İş Bankası, Akbank, QNB Finansbank, Şekerbank, TEB, Vakıfbank, Yapı Kredi dedicated to Turkish women entrepreneurs for **Women in Business** programme.



**IFC** provides **Garanti BBVA & TSKB** a loan, that increases women's employment in order for women entrepreneurs to use it as working capital.



**Türk Eximbank**; "Women Entrepreneur Export Support Loan

Highest proportion of female founders among startups that have become unicorns in Europe



İşbank carried out in cooperation with the Women's Power in Initiative Project, and TÜRKONFED and in partnership with UNWOMEN.



**TOBB Women Entrepreneurs Board** providing support to women entrepreneurs in realizing their entrepreneurial ideas with training, capacity building



To support and encourage the development of women's entrepreneurship and its ecosystem by guiding access to financial resources

**KADEM**

**Women in Innovation**

More than 200 women entrepreneurs received training at innovation camp. 30 women entrepreneurs who were received the award, 13 established their own companies and received national and international awards.



**GİRİŞİMCİ İŞ KADINLARI DERNEĞİ**  
THE ASSOCIATION OF ENTERPRISING BUSINESS WOMEN

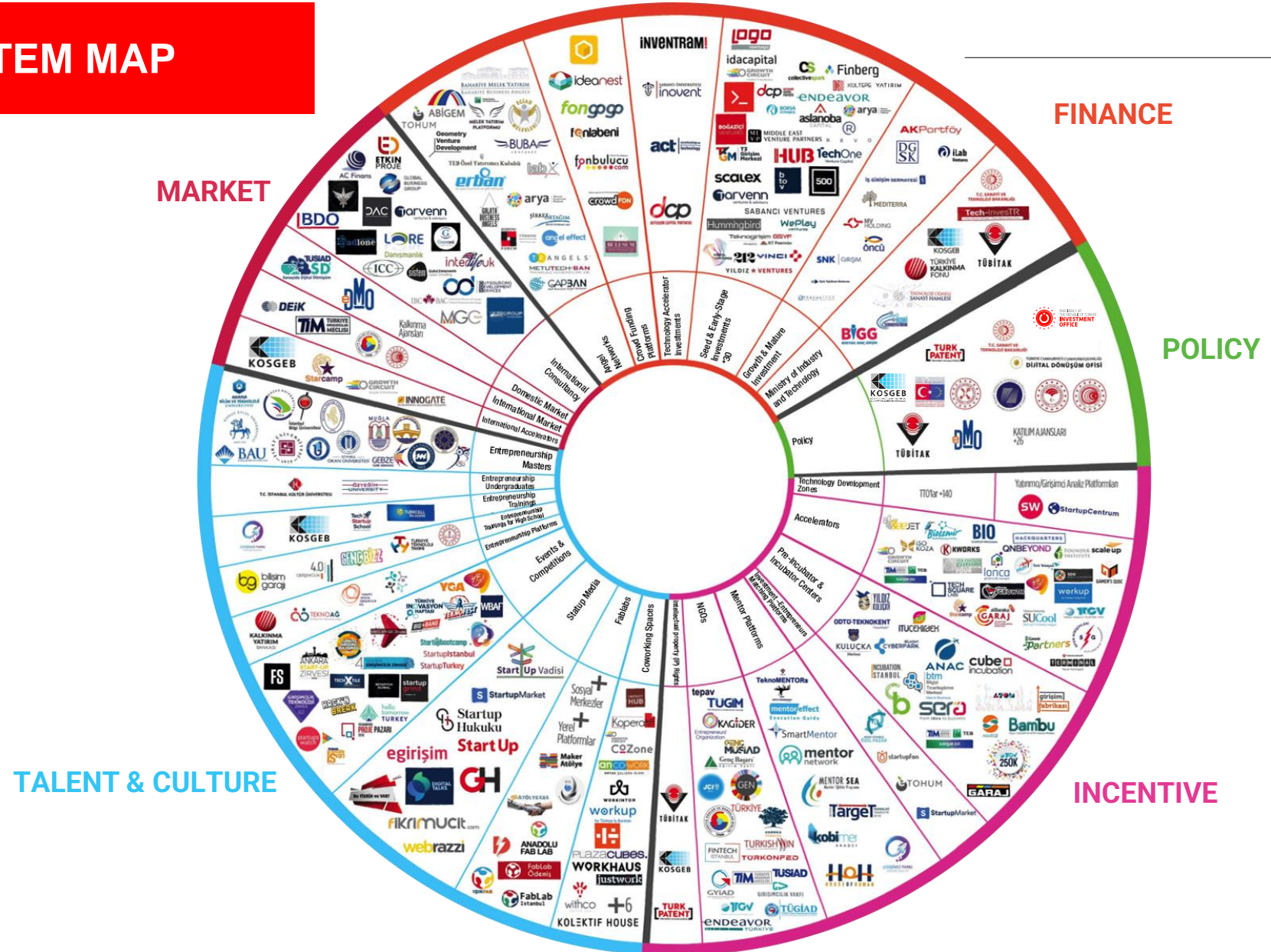


**TURKISH WOMEN**





# STARTUP ECOSYSTEM MAP



# SOME OF THE LARGEST DEALS IN 2015-2023

## EXIT ACTIVITY IN TÜRKİYE



 <b>Delivery Hero</b> <b>Yemeksepeti</b>  Delivery Hero bought Turkish <b>yemeksepeti</b> for <b>USD 589Million</b>	 <b>GRAM GAMES</b>  Zynga bought 1010 maker <b>Gram Games</b> for <b>USD 250Million</b>	 <b>Microsoft</b>  <b>Citiusdata</b>  Microsoft acquired open-source firm <b>Citius Data</b>	 <b>peak</b>  Zynga bought Turkish mobile game maker <b>Peak</b> for <b>\$1.8bn</b>	  <b>arvento</b>  Brisa acquired mobility solutions provider <b>Arvento</b> Mobile Systems	 <b>Carbon Health</b>  <b>inofab health</b>  Carbon Health acquired digital health platform <b>Inofab Health</b>	  <b>tridi</b>  Xometry acquired digital 3D printing platform startup <b>Tridi</b>
 <b>ATLASSIAN</b>  <b>Opsgenie</b>  Australia based software developer paid <b>USD 295Million</b> for Turkish <b>OpsGenie</b> .	 <b>Alibaba.com</b>  <b>trendyol</b>  Chinese <b>Alibaba</b> paid <b>USD 728Million</b> for the %82 stake of the Turkish e-commerce company.	  <b>Masomo</b>  Miniclip acquired <b>\$100M</b> for the mobile game maker <b>Masomo</b>	  <b>DataRow</b>  Amazon Web Services acquired cloud software startup <b>DataRow</b>	  <b>rollic</b>  Zynga paid <b>\$168M</b> for the %80 stake of mobile game maker <b>Rollic</b>	 <b>WREN HOUSE</b> INFRASTRUCTURE  <b>ZES</b>  Wren House acquired charging infrastructure provider <b>ZES</b>	  <b>alictus</b>  SciPlay paid <b>\$100M</b> for the %80 stake of mobile game maker <b>Alictus</b>

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## SUCCESS STORIES



# SUCCESS STORIES

## ICT GIANTS HAVE BEEN INVESTING IN TÜRKİYE FOR DECADES



Founded in 1984, Cisco Systems, Inc. is an American multinational technology conglomerate that develops, manufactures and sells networking hardware, telecommunications equipment and other high-technology services and products. The largest networking company in the world, Cisco's FY'19 Revenue is USD 51.9 billion with an employee count of 77,500 globally.

Cisco has been present in TÜRKİYE for years and has invested in various areas, one of which is training programs in the tech industry through the Cisco Networking Academy Program. Trainings have been provided through this program since early 2000s.

In 2018, Cisco opened an **innovation center in Istanbul, TÜRKİYE** in a bid to develop solutions for the digital era.



American multinational information technology company that not only provides hosting and consulting services from computers to nanotechnology, but also manufactures and markets computer hardware, middleware and software.

IBM has been operating in TÜRKİYE since the 1930s, and since then has participated in various projects. Projects have included working together with Turkish local bodies, both governmental and NGO, to strengthen the governance practices of community organizations who are implementing a range of local initiatives that promote economic development and growth.



Ericsson, a world leader in communications technology and service, works in 180 countries and employs more than 111,000 experts in line with its vision of "the Networked Society". Ericsson's services, software, and infrastructure – particularly in mobility, broadband, and the cloud – enable the telecoms industry and other sectors to conduct better business, increase efficiency, improve user experience, and capture new opportunities.

Ericsson TÜRKİYE's R&D team, consisting of more than 550 R&D and technical support employees based in its Istanbul, Izmir and Ankara locations, provides services through innovative activities in various fields of information and telecoms technologies. In those centers, more than 140 R&D projects, 20 of which are supported by TÜBİTAK, are being implemented. Ericsson TÜRKİYE participates in many international R&D projects together with SMEs and universities in TÜRKİYE. Ericsson Research is a global organization that develops new patentable technologies and system concepts, which drive the standardization of future mobile systems, innovating and re-shaping the industry 5-10 years ahead. Ericsson Research has operations in eleven countries including TÜRKİYE



# SUCCESS STORIES

## ICT GIANTS HAVE BEEN INVESTING IN TÜRKİYE FOR DECADES



SAP SE is a German-based European multinational software corporation that makes enterprise software to manage enterprise resources, business operations and customer relations.

Founded in 1972, SAP currently has operations in over **180 countries and has labs in only 20 countries**, one of which is in TÜRKİYE.

Within this context, a significant portion of the SAP Data Hub solution, which includes artificial intelligence and machine learning applications, is developed by Turkish engineers at the SAP Development Center and exported to the whole world.

SAP SE sees TÜRKİYE as the "main hub" for digital transformation and Turkish engineers carry out "mega" projects in Turkic republics, Russia, Africa, the Middle East and Europe



Chinese multinational networking, telecommunications equipment, and services company.

Founded in 1987, Huawei is currently the largest telecommunications equipment manufacturer in the world, as well as the second largest smartphone manufacturer in the world.

Huawei began its operations in TÜRKİYE in 2002. Currently, in its TÜRKİYE office, Huawei has **over 1,500 employees**, an R&D center which is second-largest R&D center outside of China, training center, and a customers solutions and integration experience center.



Alibaba Group is the world's largest online and mobile commerce company. Alibaba describes its mission as to make it easy to do business anywhere.

In 2018, Alibaba group acquired the major shares of TÜRKİYE's leading e-commerce platform Trendyol which is serving over 16 million customers. It is also the fastest growing e-commerce company in the region with over 90 million monthly visits.

Trendyol is the largest internet employer in TÜRKİYE with a team over 2300 people. Trendyol has an R&D center with an ever-growing R&D team that focuses on NLP, real-time data analysis, machine and deep learning, data visualization and big data.

# SUCCESS STORIES

## ICT GIANTS HAVE BEEN INVESTING IN TÜRKİYE FOR DECADES

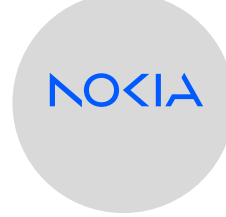


American multinational technology company that develops, manufactures, licenses, supports and sells computer software, consumer electronics, personal computers and related services.

Founded in 1975, in 2020, Microsoft reported revenue was 143 billion dollars with over 144,000 employees.

Microsoft Türkiye is used as a managing center for the Middle East and Africa regions, composed of **79 countries**.

Microsoft acquired Citus Data Inc., a Software Development company that was founded in Türkiye and then expanded internationally. Upon acquisition, Microsoft continued investing Citus's team in Türkiye and expanded their responsibility by giving them additional products to develop that are core to Microsoft's Azure Data platform



As a B2B technology innovation leader, Nokia pioneering networks that sense, think and act by leveraging work across mobile, fixed and cloud networks. In addition, Nokia create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs. Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today and to create the digital services and applications of the future.

Nokia operates in Türkiye for several decades and adheres to a long-term integration strategy aiming development of innovative technologies, creation of digital economy and a digital society.

Nokia has a partnership agreement with Karel, Turkish electronic manufacturer, to produce 4.5G and 5G base stations in Türkiye. Local manufacturing of Nokia base stations started and ongoing since May 2022. Jointly with Turk Telekom and Arcelik Nokia runs 5G@EndTech program to stimulate development of the local 5G use-cases for industries. Nokia has a strategic partnership agreement with MEXT Technology Center, to collaborate in the context of digitalization of the industrial manufacturing sector in Türkiye with Nokia 5G infrastructure.



ZTE, Chinese multinational ICT solutions vendor **acquired nearly half of Turkish Netas'** shares in 2017. This is considered one of the biggest transactions in technology development investments in Türkiye.

2020 was the year that started reaping the synergic benefits of ZTE and Netaş working together. Netaş achieved 170% growth in telecommunications technologies.

Localization efforts, conceived in 2019 with FTTx systems, endure with many other products of ZTE. The goal here is to undertake local production of ZTE staples by way of transferring the knowhow to Türkiye.

Another joint step in this direction was for the IPTV technologies. Netaş started building ZTE's new generation IPTV platform in Türkiye





PRESIDENCY OF  
THE REPUBLIC OF TURKEY  
**INVESTMENT  
OFFICE**



**Contact**

Ahmet DİLER | [adiler@invest.gov.tr](mailto:adiler@invest.gov.tr)



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