WHY INVEST IN TURKEY? ICT SECTOR?

AUGUST 2021

INVEST.GOV.TR
EXECUTIVE SUMMARY

FAVORABLE INVESTMENT ENVIRONMENT

• Strong macroeconomic growth with increasing income per capita and a burgeoning middle class

• Favorable 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 Turkey with significant activities, using Turkey 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 and hospitality sectors

ROBUST GROWTH IN THE SECTOR

• Turkish ICT market surpassed USD 27 billion in 2020

• 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
The drop is due to changing currency rates, although by TRY, it is recorded as an unprecedented average growth of 17% in 5 years.

TURKISH ICT MARKET HAS REACHED USD 27 BILLION MARKET SIZE AND A WORKFORCE OF ALMOST 160K IN THE LAST FIVE YEARS.

Source: TUBİSAD ICT Market Data 2020
TURKEY HAS DOUBLED ITS EXPORTS SINCE 2014 - REACHING OVER USD 1.5 BILLION WHILE BROADENING ITS EXPORT MARKETS
TURKISH ICT SECTOR OUTLOOK

MAJOR PLAYERS

OUT OF 158,000 EMPLOYEES

29% ARE WOMEN

57% HAVE A UNIVERSITY DEGREE

ALMOST 70% ARE YOUNGER THAN 35

24% ARE R&D PERSONNEL

LARGE-SIZED LOCAL AND INTERNATIONAL COMPANIES IN THE ECOSYSTEM

USD 18 BILLION OF INTERNATIONAL INVESTMENT ATTRACTED SINCE 2005

THERE ARE OVER 2,000 COMPANIES IN TURKISH ICT SECTOR WHERE BOTH LOCAL AND INTERNATIONAL PLAYERS ARE ACTIVE

Source: TUBISAD ICT Market Data 2020, CBRT

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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 TURKEY ARE ON THE RISE

Hepsiburada, a top player in Turkey’s fast-growing e-commerce sector, saw its market value hit more than $4.2 billion after becoming the first Turkish firm to be listed on the NASDAQ stock exchange.

Trendyol, Turkey’s No. 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 Turkey’s first Decacorn.

TURKEY Yearly Angel & VC Deal Activity

TURKEY VC Fundraising Activity

Source: Startups.watch Turkish Startup Ecosystem 2020 Year in Review
TURKISH ICT SECTOR OUTLOOK

M&A MARKET

$1.8 BILLION

$728 MILLION

$295 MILLION

Peak - the largest VC backed exit in Europe in 2020

Source: Startups.watch Turkish Startup Ecosystem 2020 Year in Review
Growth Drivers in Turkey
ROBUST ECONOMY

13th Largest Economy in the World

RANKING OF ECONOMIES BY GDP AT PPP

<table>
<thead>
<tr>
<th>Rank</th>
<th>2003</th>
<th>2019</th>
<th>2020</th>
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<tbody>
<tr>
<td>1.</td>
<td>USA</td>
<td>CHINA</td>
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<td>2.</td>
<td>CHINA</td>
<td>USA</td>
<td>USA</td>
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<td>3.</td>
<td>JAPAN</td>
<td>INDIA</td>
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<td>4.</td>
<td>GERMANY</td>
<td>JAPAN</td>
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<tr>
<td>5.</td>
<td>INDIA</td>
<td>GERMANY</td>
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<td>6.</td>
<td>RUSSIA</td>
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<tr>
<td>7.</td>
<td>FRANCE</td>
<td>INDONESIA</td>
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<td>8.</td>
<td>UK</td>
<td>BRAZIL</td>
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<td>9.</td>
<td>BRAZIL</td>
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<td>10.</td>
<td>ITALY</td>
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<td>11.</td>
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<td>12.</td>
<td>INDONESIA</td>
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<td>13.</td>
<td>SPAIN</td>
<td>TURKEY</td>
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<td>14.</td>
<td>CANADA</td>
<td>S.KOREA</td>
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<td>15.</td>
<td>S.KOREA</td>
<td>SPAIN</td>
<td>SPAIN</td>
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<td>16.</td>
<td>S.Arabia</td>
<td>CANADA</td>
<td>CANADA</td>
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<td>17.</td>
<td>IRAN</td>
<td>S.Arabia</td>
<td>S.Arabia</td>
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<tr>
<td>18.</td>
<td>TURKEY</td>
<td>IRAN</td>
<td>AUSTRALIA</td>
</tr>
</tbody>
</table>

AVERAGE ANNUAL GDP GROWTH (%) 2002-2020

- USA: 5.1
- TURKEY: 5.1
- POLAND: 3.6
- ROMANIA: 3.4
- BULGARIA: 3.0
- CZECHIA: 2.6
- HUNGARY: 2.0

Real GDP Growth (Index: 2002=100)

- TURKEY registered the second largest economic growth in OECD.

Turkish economy has more than tripled over the past 16 years and is promising more growth in future.
FAVORABLE DEMOGRAPHICS

HALF OF POPULATION UNDER AGE OF 32.7 CREATING DYNAMIC LABOR FORCE AND FISCAL DISCIPLINE

TURKEY

EUROPE

WORKING AGE POPULATION (15-64+) (Index: 2014=100)

TOTAL DEPENDENCY RATIO (%), Age 0-14 & 64+)/Age 15-64)

Source: Turkstat, Eurostat, UN, 2019
## SKILLED & COST-COMPETITIVE LABOR FORCE

### TURKEY’S EDUCATION SYSTEM UPGRADED TO OFFER OUTSTANDING ACADEMIC PROGRAMS

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

<table>
<thead>
<tr>
<th>Field</th>
<th>2019</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Undergraduate</td>
<td>48,941</td>
<td>7,545</td>
</tr>
<tr>
<td>ICT Undergraduate</td>
<td>2,653</td>
<td>501</td>
</tr>
<tr>
<td>TOTAL</td>
<td>59,640</td>
<td>8,696</td>
</tr>
</tbody>
</table>

**Source:** Ministry of National Education Council of Higher Education, Turkstat, stackoverflow.com

#### Number of Grads from Vocational & Technical High Schools

<table>
<thead>
<tr>
<th>Year</th>
<th>Engineering Undergraduate</th>
<th>ICT Undergraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>495</td>
<td>177</td>
</tr>
</tbody>
</table>

Over 120K professional software developers in Turkey

#### Labor Force by Education Level

<table>
<thead>
<tr>
<th>Year</th>
<th>University</th>
<th>High School and below</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>2002</td>
<td>10%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Source: invest.gov.tr
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, 2019 (%)

- 15-34 years
- 35-74 years

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

USD K, 2021

Source: IMD World Competitiveness Yearbook Executive Opinion Survey based on an index from 0 to 10; Daxx software developers salaries, Eurostat, OECD, BLS, Turkstat.
DATA INFRASTRUCTURE

BROADBAND SUBSCRIPTIONS DOUBLED SINCE 2010 TO REACH 83 MILLION, EUROPE’S 4TH BIGGEST ONLINE POPULATION

Fixed and Mobile Broadband Subscriptions
(in millions)

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

Source: OECD Broadband Portal, 2020 June
TECHNOPARKS & R&D CENTERS

TECHNOPARKS
- 72 Technoparks (an additional 14 underway)
- 67K employment in over 6,350 companies
- 5% international companies
- >1300 companies with academia partnership
- Total export is USD 5.7 Billion

R&D CENTERS
- 1,242 R&D Centers
- 67K employment; 18% in ICT industry
- 16% international companies

UNIVERSITIES
- 9 universities in Top 1000; 1 in Top 500 (QS World University Rankings 2021)
- Over 1450 academicians in ICT

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.

<table>
<thead>
<tr>
<th>Main Incentive Tools</th>
<th>General Incentives</th>
<th>Regional Incentives</th>
<th>Incentives for Strategic Investments</th>
<th>Project Based Incentives</th>
<th>R&amp;D Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Tax Reduction</td>
<td></td>
<td></td>
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<tr>
<td>VAT/Custom Duty Exemption</td>
<td>●</td>
<td>●</td>
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<td>●</td>
<td>●</td>
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<tr>
<td>Social Security Premium Support</td>
<td></td>
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<tr>
<td>Income Tax Withholding Support*</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>Interest Support**</td>
<td></td>
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<tr>
<td>Land Allocation</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>Qualified Personnel Support</td>
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<td>●</td>
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<tr>
<td>Infrastructure Support</td>
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<td>●</td>
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<tr>
<td>Energy Cost Support</td>
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<td>●</td>
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</table>

*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

Source: Ministry of Industry and Technology, MSTI
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 200K 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 5Million 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

1514 VC Support Program is launched to support the VC ecosystem in Turkey
Opportunities in Turkish ICT Sector
OPPORTUNITIES IN SUB-SECTORS

TURKEY 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
TURKEY’S TELECOMMUNICATIONS MARKET HAS REACHED TO 120 BILLION TRY - USD 17 BILLION IN 2020

- Strong growth of the market – doubled to 120 Billion TRY in the last 5 years
- Growing export - USD 97 Million in 2020
- Fixed and mobile broadband subscriptions in Turkey have exceeded 83 million in 2020 - an impressive penetration rate of 90%
- 424,915 km of fiber optic with 4 million subscribers (as of 2020 Q4)
- A high mobile / smartphone possession rate of 95.3% - 14th in the world
- Strong ecosystem with local and international players with a total of 33K employees

TRY 48 BILLION HAS BEEN INVESTED ON TELECOM INFRASTRUCTURE SINCE 2014 (TENDER AMOUNTS FOR 2015 ARE INCLUDED IN YEAR 2015)

**Investments (Billion TRY)**

Growth in the Sector is Driven by National Broadband Strategy Targets to Reach by 2023:

- Fixed & Mobile broadband penetration rate: **130%**
- Internet Usage Rate: **80%** of population (between ages 16-74)
- 100Mbps speed for at least **100%** of households
- Fiber Internet Subscription: **10 million**

5G AND BEYOND

5G WILL SHAPE ALL VERTICAL SECTORS

- ENERGY
- MANUFACTURING
- HEALTHCARE
- AUTOMOTIVE
- TRANSPORTATION
- FINANCE

Source: company websites, expert interviews

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.

5G and Beyond White Book published to set forth the road map on the way to 5G.

5G and vertical Sectors Report prepared by BTK on the use of 5G and its effects on vertical sectors.

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.

5G and Beyond Joint Graduate Support Program launched to upgrade qualified human resources to support all stakeholders.

End to End Domestic and National Communication Network Project carried out by 16 members of Communication Technologies Cluster and 3 operators.
TURKEY’S E-COMMERCE MARKET HAS REACHED 226 BILLION TRY IN 2020- OVER USD 32 BILLION

E-commerce market in Turkey continues to grow with an annual growth of 66%, reaching TRY 226.2 Billion

Fixed and mobile broadband subscriptions in Turkey have reached a total of 78.3 million in 2020 - an impressive penetration rate of 95%

Enhanced use of internet and incremental number of online shoppers rate of 59% - a population of over 30 Million

Potential in mobile phone shopping - a mobile shoppers rate of 63%, which is higher than that of USA, UK, Spain and Brazil

Turkey 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

Source: company websites, expert interviews
E-COMMERCE

TURKEY’S ONLINE RETAIL RATIO IS 10.1% IN 2020, WHICH REPRESENTS A MINIMUM 2X GROWTH OPPORTUNITY:

MARKET BREAKDOWN

Online Shopping Penetration (2020)

- Online Travel: 36%
- Online Auction: 10%
- Multi-Channel Online Retail: 17%
- Online Retail: 37%

Source: Euromonitor Retailing 2021 ed., press excerpts

Online retail/total retail ratio is calculated by dividing retail e-commerce size used in this study over total retail sector size in Turkey estimated that Euromonitor. Online and mobile shoppers are based on internet users who reported that they shopped online (desktop vs mobile) one month ago.
FINTECH

TURKEY IS TRANSFORMING INTO A FINTECH HUB, WITH OVER 200 COMPANIES AND AN ONLINE PAYMENT MARKET OF OVER USD 35 BILLION

CAN TURKEY BE THE NEXT FINTECH HOTSPOT?

A strong banking system with an educated workforce
Europe’s biggest credit and debit card market - 264 million (by 2020)
Total amount of card payments at around USD 162 Billion (in 2020)
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 22% with around USD 35 Billion
Turkey’s strategic location within a 4-hour flight distance from London and Dubai
Turkey’s vision of turning Istanbul into a regional finance center
It is expected that the issuance of digital banking license will begin by the end of 2021
It is expected that equity-based and lending-based crowdfunding applications will begin by the end of 2021 Q3

Source: BKM statistics, Fintech Istanbul Turkey Fintech Report 2019, Turkish Fintech Ecosystem Map v6.03 by Fintechtime, Startupwatch 2020 Year in Review
Source: Turkish Fintech Ecosystem Map v7.00 by Fintechtime
TURKEY’S GAMING MARKET HAS PASSED US$ 880M IN 2020, 18TH LARGEST REVENUE IN THE WORLD

Total generated game revenue in 2020 is
- US$ 880 Million
- US$ 450 Million in mobile
- US$ 430 Million in PC/console
- 18th highest in global revenue

Toon Blast and Toy Blast of Peak and Go Knots 3D and Tangle Master 3D of Rollic were among the top grossing games for US App Store for over two years

36 million active users in Turkey spending 70% of their gaming time (total game time spent) on PC

An ecosystem that consists of over 600 large & small companies including indies - exports in 2020 exceeded $1.5 Billion

Source: Gaming In Turkey Turkish Game Market 2019 Report, TOGED, gaminginturkey.com, AdColony&Nielsen Research, Press excerpts
TURKEY’S PUBLIC CLOUD MARKET HAS REACHED USD 400 MILLION IN 2020

Public cloud market in Turkey is USD 400 Million in 2020, expected to double in next few years

Robust terrestrial fiber and submarine cable connectivity with international networks

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

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

There are 43 Tier II and Tier III data centers (centers that belong to banks and private companies are excluded) and 2 Tier IV data centers

A total of 100,000m² white space is estimated - 35,000m² for data center operators, 10,000 m² for banks, 35,000m² for companies and 20,000m² for public institutions

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

24 data Centers run by Operators - 40K m² White space

413,309 km Fiber length

VoD (Video-on-Demand) Market in Turkey

- Turkey to remain MEA market leader, with USD 293 Million in SVOD revenues in 2020, it is expected to show 10.3% GAGR resulting in a projected market volume of USD 480M by 2025
- Netflix and Amazon in the market as well as Turkish VoD platforms like BluTV and PuhuTV
- 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

Turkey is the lead AI investor in the MEA region with a total investment amounting to $3.4 billion.

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

Digital Transformation Office is working out for National Artificial Intelligence Strategy in collaboration with universities, the private sector and NGOs.

Covid-19 pushed the use of AI and Cloud services to upgrade customer experience.

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.

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

Over 1,200 Academicians with research areas in 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.

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

Source: AI in Middle East and Africa Outlook for 2019 and Beyond conducted by EY, How does Cloud and AI transforming the Contact Centers to improve customer experience IDC Whitepaper, National Artificial Intelligence Strategy Draft Report.
Turkey has announced its digital transformation roadmap on its road to become a regional leader in selected technologies.

**Digital Turkey 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

**Suppliers**
- Supporting local technology suppliers
  - 1000 medium and large sized digital technology suppliers
  - USD 1 Billion 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
  - 1M software developer training program

**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

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

Source: Ministry of Industry and Technology Digital Turkey Roadmap 2018

1 Million Software Developer Training Program has been launched to upgrade country’s labor force with regard to its ever-growing digital sectors.
E-GOVERNMENT

The Eleventh Development Plan (2019-2023) Envisions the Uptake of Electronic Services to 70% by 2023

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

Public ICT investments have reached a total of 69 Billion TRY since 2002 - 3.7 Billion TRY in 2020

Education, transportation-communication and energy with larger shares

FATIH project is a comprehensive project that is designed to enhance education through technology and create equal opportunity base for students and schools - includes hardware (interactive boards, tablets, printers), high speed internet for every school, data centers, management and content software and trainings.

In the wake of Covid-19 pandemic the average monthly login to E-government portal increased from 300 M to 500 M


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 TURKEY PORTAL HAS REACHED OVER 53 MILLION USERS AND CURRENTLY, MORE THAN 5,600 SERVICES PROVIDED BY 750 INSTITUTIONS

Turkey is a manufacturing and engineering center in automotive and already an export hub for the European automotive industry.

Highly integrated to the global industry with 13 OEMs manufacturing passenger cars, LCVs and heavy-duty trucks - around 1.5 million vehicles.

Mobility ecosystem is building around electric, connected and new generation vehicles-full spectrum of services from charging infrastructure to location-based applications, smart device connection to smart parking applications.

TOGG have been developing a smart mobility ecosystem with more than 50 partner startup.

New services and business models will be developed within the smart and connected vehicle ecosystem.

Well-trained human capital - cost competitive and high-quality production and engineering.

Increasing R&D activities - 9 R&D Centers play a dominant role in exporting engineering services.

Ford Otosan R&D Center is among Ford’s top3 global R&D Centers.

Tofas Fiat R&D Center is Fiat’s only R&D Center outside of Italy serving the European market.

6th largest domestic market in Europe - around 1 million vehicles.

Source: company websites, expert interviews.
HEALTHTECH ECOSYSTEM

Turkey is a hub for HealthTech ecosystem leveraging the depth, variety and quantity of data accumulated 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 Turkey (NHIS) is a nationwide 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.

**Family Medicine Information System**
- The Pharmaceutical Track Trace System’s (İTS) aim is to provide drug safety and prevent counterfeiting. System follows the supply chain from the production/importation to the end user - SINCE 2012.

**National Health Data Dictionary**

**Public & Private Telemedicine Platforms**

**Ministry of Health Tele-medicine System**

**Spread of Digital Health Services Motivated by the Government’s Ambitious Health Transformation Program is Paving the Way for Hundreds of HealthTech Ventures**

Source: HIMSS Analytics, Ministry of Health, Investment Office Study HIMSS: Healthcare Information and Management Systems Society  EMRAM: Electronic Medical Record Adoption Model
Start-up Ecosystem
ISTANBUL HAS BEEN RANKED AMONG THE TOP 20 OF THE WORLD’S 100 BEST “EMERGING ECOSYSTEMS” FOR STARTUPS

BILLION DOLLAR CLUB

$1B, Series B
$hpsiburada.com$ $3.8B, IPO
$getir$ $1B, Acquisition
$peaktrendyol.com$ $16.5B, PE

Source: Startups Watch Turkish Startup Ecosystem 2020 Year in Review, Startup Genome GSER 2020
Most Funded Verticals in 2020

- **Games**: $50M, 25
- **AI**: $38M, 14
- **MarketingTech**: $32M, 4
- **Healthtech**: $22M, 15
- **Fintech**: $20M, 16

Most Founded Verticals by Entrepreneurs in Turkey


Source: Startups Watch Turkish Startup Ecosystem 2020 Year in Review, Startup Genome GSER 2020
SOME OF THE LARGEST DEALS IN 2010-2020

EXIT ACTIVITY IN TURKEY V1.5 - OCTOBER 20, 2020

Global marketplace
Ebay acquired
Turkish leading marketplace
Gittigidiyor

Source: Startups.Watch Notes: Only exits and secondary transactions above 50% are counted. Feel free to ask for updates: support@startups.watch

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### SOME OF THE LARGEST DEALS IN 2010-2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Company</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Zynga</td>
<td>Bought 1010 maker Gram Games for USD 250 Million</td>
</tr>
<tr>
<td>2011</td>
<td>Chinese Alibaba</td>
<td>Paid USD 728 Million for the %82 stake of the Turkish e-commerce company.</td>
</tr>
<tr>
<td>2012</td>
<td>Australia based software developer</td>
<td>Paid USD 295 Million for Turkish OpsGenie.</td>
</tr>
<tr>
<td>2013</td>
<td>Zynga</td>
<td>Paid $168M for the %80 stake of mobile game maker Rollic</td>
</tr>
<tr>
<td>2014</td>
<td>Zynga</td>
<td>Bought Turkish mobile game maker Peak for $1.8bn</td>
</tr>
<tr>
<td>2015</td>
<td>Amazon Web Services</td>
<td>Acquired cloud software startup DataFlow</td>
</tr>
<tr>
<td>2016</td>
<td>Microsoft</td>
<td>Acquired open source firm Citus Data</td>
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<td>2017</td>
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<td>2018</td>
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<td>2020</td>
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</tbody>
</table>

### EXIT ACTIVITY IN TURKEY V1.5 - OCTOBER 20, 2020

- **German takeout food company** bought Turkish yemeksepeti.com for USD 589 Million
- **Zynga** bought Turkish mobile game maker Rollic in 2014 for $1.8bn
- **Amazon Web Services** acquired cloud software startup DataFlow in 2015
- **Microsoft** acquired open source firm Citus Data in 2016
- **Australia based software developer** paid USD 295 Million for Turkish OpsGenie in 2012
- **Chinese Alibaba** paid USD 728 Million for the %82 stake of the Turkish e-commerce company in 2011

Source: Startups Watch Notes : Only exits and secondary transactions above 50% are counted. Feel free to ask for updates : support@startups.watch

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The number of stakeholders is increasing, and this number is not exhaustive. We have left some incubation centers out of this list as it is not comprehensive. The list of stakeholders includes not only incubation centers, but also business angels and crowdfunding platforms. For more information, please visit https://startups.watch

* Only incubation centers having explicit startup list in their web sites are listed. This is by no means an exhaustive list, there are so many stakeholders that are not on this list. This is only our top picks. Feel free to ask for updates: support@startups.watch
Success Stories
ICT GIANTS HAVE BEEN INVESTING IN TURKEY 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 Turkey 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, Turkey in a bit 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 Turkey 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.

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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 Turkey’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 Turkey participates in many international R&D projects together with SMEs and universities in Turkey. 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 Turkey.

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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 Turkey.

2020 was the year that started reaping the synergic benefits of ZTE and Netas working together. Netas 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 Turkey.

Another joint step in this direction was for the IPTV technologies. Netas started building ZTE’s new generation IPTV platform in Turkey.
ICT GIANTS HAVE BEEN INVESTING IN TURKEY FOR DECADES

**SAP SE**
- 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 Turkey.
- 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 Turkey as the “main hub” for digital transformation and Turkish engineers carry out “mega” projects in Turkic republics, Russia, Africa, the Middle East and Europe.

**Microsoft**
- 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 Turkey 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 Turkey and then expanded internationally. Upon acquisition, Microsoft continued investing Citus’s team in Turkey and expanded their responsibility by giving them additional products to develop that are core to Microsoft’s Azure Data platform.

**Huawei**
- 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 Turkey in 2002. Currently, in its Turkey office, Huawei has over 1,500 employees, an R&D center, training center, and a customers solutions and integration experience center.

**Alibaba Group**
- 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 Turkey in 2002. Currently, in its Turkey office, Huawei has over 1,500 employees, an R&D center, training center, and a customers solutions and integration experience center.

**Trendyol**
- 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 Turkey’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 Turkey 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.