The Role of Technoparks in Supporting Entrepreneurial Activities: ODTÜ TEKNOKENT Experience

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What is Technopark?

- A cluster of technology based organizations
- A place where innovation based studies is performed
- A big organization which supports social and financial structure of a region
- A place where young talents want to study
## What is Technopark?

<table>
<thead>
<tr>
<th>Type of Park</th>
<th>Main Activities</th>
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<tbody>
<tr>
<td>Incubator Center</td>
<td>Incubation of science, knowledge and technology-based businesses</td>
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<tr>
<td>Research Park</td>
<td>Research, development and design activities</td>
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<tr>
<td>Science Park</td>
<td>Research, development and design activities, and some high-value low-volume manufacturing activities</td>
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<tr>
<td>Technology Park</td>
<td>Research, development and design activities together with a greater portion of high-value low-volume manufacturing</td>
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<tr>
<td>High Technology Industrial Park</td>
<td>Usually relatively little research, development and design but with proportionally more high-value low-volume manufacturing</td>
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<td>Technopole/Technopolis</td>
<td>A city or region committed to developing its economy through investment to support education, science, technology and advanced engineering activities</td>
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<td>Science City</td>
<td>Whole new or existing city developed with the purpose of creating a center for science and high technology activities</td>
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History

- First attempts started in 1950's (Stanford University, USA)
- In the following 20 years, USA followed by Europe countries and Japan
- Until 1980's it was a real-estate approach then it changed to technology based approach
- Some other important early science park establishments:
  - Sophia Antipolis - France
  - Cambridge – UK
  - Tsukuba – Japan
- Number of science parks > 4000 (different size and focus)
Contribution of Technoparks

- Stimulate the formation of start-ups
- Encourage spin-off firms started by academics
- Facilitate technology transfer from academic institutions to park firms
- Foster the technologies of the future
- Create new jobs for the region
- Improve the performance of the local economy
- Generate income for the academic institutions
- Improve the image of the location/university
- Improve national competitiveness level
- Attract investment
• Early feasibility studies started in 80’s
• First technology park established in 2000
• In 2001, Technology Development Zones Law was enacted
Incentives

According to Technology Development Zone Law (no: 4691)

- Income and corporate tax exemptions for the incomes generated from R&D activities of the companies
- Income tax exemptions for the salaries of the researchers and R&D personnel
- VAT exemptions for the software development activities
- Right of recruitment of individuals from government research organizations or universities (income obtained by academicians or research personnel are exempted from the university revolving fund deductions)
- Legal permission for academicians to establish firms to commercialize their academic works
Technoparks in Turkey

In Total 81 Technology Parks (58 active) – September 2018

• Number of Companies: 5,068
• Academic Spin-offs: 1,066
• Total Number of Employees: 49,242
• Total Volume of Export: 3.6 Billion USD
• Domestic Sales: 12 Billion USD
• Total Number of Patents: 1,015
• First technopark in Turkey
• Established in 2000
• 380 Companies
• 7,200 Employees
• Services:
  • Entrepreneurial Activities
  • University – Industry Collaboration
  • Clusters (Mature Companies)

> 1.3 billion USD Export

> 2.4 billion USD Domestic Sales

Total closed area of 170,000 m²

3 campuses

~1200 Projects
Entrepreneurship Activities

Awareness | Pre-Incubation | Incubation | Growth

YENİ FİKİRLER YENİ İŞLER ACCELERATION PROGRAM
ENTREPRENEUR
ANIMATION TECHNOLOGIES AND GAME DEVELOPMENT CENTER – ATOM
EARLY STAGE START-UP
LATE START-UP
MATURE COMPANY

GROWTH CIRCUIT
Think Global
Born Global
Expand Global
Scale Global

GLOBAL COMPANIES
Entrepreneurship Activities

- 70+ new startups established
- 120+ Startups/Spin offs hosted
- 1000+ Employment
- 400+ Developers
- 25 Startups
- 30M+ Game Fans
- 3M $ Exports
- 14 Years of Success

Incubation Centers

- 1000+ Mentorships
- 3000+ Access
- 2000+ Trainings
- 1.500+ Games
- 400+ Startups
- 50M $ Investment

KOSGEB
International Acceleration Program Support

First International Incubation Center

- 60+ SF office support to entrepreneurs
- 7 Startups Invested

GROWTH CIRCUIT
Investor & Accelerator

ATOM

ODTU-TEKNOKENT
Success Stories: Start-ups

- A very large worldwide online training site (adaptive learning platform)
- Gaming technologies of 8M+ sales numbers

- TR’s first and the only digital content platform
- Integrated smart junction management system
- Indigenous technology on fiber laser systems
- First and the only indigenous rehabilitation robot
University–Industry Collaboration

- Utilising research and technology development infrastructure of the university
- Providing match making services and organizing joint events
- Supporting PhD and Ms studies
- Joint R&D projects
- Joint publications
- Providing technical support to the university by the companies
- Providing academic consultancy
- Commercialization of academic knowledge through TTOs
- Internship and job creation Programmes
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ODTÜ-TEKNOKENT
University – Industry Collaboration

As of end of 2017

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<th>Since 2002</th>
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<tr>
<td>1,500+ Joint R&amp;D projects</td>
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<tr>
<td>675+ different academics</td>
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<tr>
<td>2,400+ contracts</td>
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<tr>
<td>250+ different companies</td>
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<td>45+ Different departments/institutions/research centers</td>
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Commercialization of R&D through tech transfer office

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<td>340+ Patent applications both national and international</td>
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<td>200+ Patent certificates</td>
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70+ Academicians (spin-offs) established in total

20 Licensing agreements

>2 M€ Valuation

in collaboration with ODTÜ TTO
Success Stories: Spin-offs

First indigenous microchip export to Taiwan and USA – 1.8M USD/kg

First Turkish DNA Chip Production

World's smallest Atomic Force Microscope

European incentive for the detection of drug resistance in cancer therapy

One of the biggest EU Support Program supported cochlear implant device that can generate its own energy

Innovative Design Solutions More than 10 Design Awards / year
Clusters

Clustering

Defence Industry
135+ Companies

T.HEALTH
Life Sciences
50+ Companies

T.ICT
ICT
160+ Companies

Energy

Prioritized Sectors

ICT
Electronics
Medical Technologies
Advanced Materials & Design

380+ technology companies
Success Stories:
Anchor Companies

- First indigenous air superiority fighter stealth – critical software & hardware
- 5G – ULAK Indigenous Communication Infrastructure
- Smart TV’s
- Military softwares for Sikorsky helicopters and German submarine systems
- Softwares and electronical systems developed for Airbus and Boeing airplanes
- Indigenous helicopter project
- Indigenous satellite project
- Indigenous unmanned aerial vehicle (Karayel)
- MERNIS – The Central Civil Registration System
Success Factors

- Provide legal incentives and governmental support
- Guarantee enough financial resources for land and institutional development at the beginning
- Take the support of a good technical university
- Select the most attractive land available
- More entrepreneurial education system - education of students and academics to have more entrepreneurial skills
- Effective R&D finance mechanisms like grants, seed or venture capital funds
- Establish a professional management team of technology park
Contribution to Rankings

- Number of Academic Spin-offs
- Number of student/graduates owned start-ups
- Employment in Academic Spin-offs and startups
- Income and export value of spin-offs and startups
- IPR generated in technology park
- University-industry related projects
- Government funded projects
ODTÜ TEKNOKENT: MOST ADVANCED & ONE of the MOST SUCCESSFUL TECHNOPARKS OF TURKEY*

ODTÜ TEKNOKENT was established by ODTÜ (Middle East Technical University), one of the most innovative research universities of Turkey
