Supporting RTDI in Growth SMEs
from a compliance with EU Programs perspective

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TTGV was founded on June 1, 1991 as a NGO,

*to support improving Turkish Industry’s competitiveness*

*in global markets through technology driven innovation.*

TTGV’s founders include 26 private companies, 6 government organisations, 10 umbrella organisations and 14 individuals.

A public-private partnership (PPP) ?

Often trail-blazing

Governed by a Board with 9 members. (3 members appointed for representation from Treasury, TÜBİTAK and KOSGEB, remaining six from private individuals)
How does TTGV operate?

- TTGV has a permanent staff of over 40.
- TTGV has access to an active pool of 500 experts.
- TTGV is subject to independent monitoring and evaluation of all activities: including independent auditing according to IAS (International Accounting Standards).
- As a foundation, TTGV is subject to laws and regulations of Rep. of Turkey, concerning the foundations.
- TTGV’s funding include:
  - Funds provided by the Undersecretariat for Foreign Trade (UFT)
  - Funds provided through the WB by the Montreal Treaty (GFE - PODS 1994-2004)
  - Own resources
Existing or Completed Programs

- Technology Development Funding (over 408 projects from over 250 firms supported)
- Strategic Focal Point Projects (UFT Funding / upto 1 year max. $100,000)
- PODS Supports
- Technology Service Centers (total of 4 set-up)
- Technical Support Services (over 1300 SMEs supported)
- Venture Capital Funds (TTGV is junior partners in two commercial funds – İşRisk and TurkVen)
- Start-up Fund (Future Fund / pilot phase / under development for scaling up and to include spin-off supports)
- Technopark Development (Bilkent Cyberpark and İTÜ Arıkkent including support for ICT themed incubators)
- Mission Oriented Pre-competitive Projects
Programs under Development

- Setting up of regional Innovation Coordinator Centers (ICCs) – with regional STDF
- Commercialization Support
- IPR Exploitation Support
- Client Development Support (including provision of Technology Audits)
- Entrepreneurship Competition (Business Plan competition in the Univs.)
- National Technology and Innovation Portal
- Technology and Innovation Clusters Development
- Technology Transfer Schemes (RTDI Grafting targeting start-ups)
Technology Development Funding and SMEs
✓ Project based support upto the phase of technical demonstration (engineering prototype)

✓ Support specifics
  ➢ Max. project duration is 24 months
  ➢ Max. UFT/TTGV contribution is $1,000,000 (or upto 50% of project cost)
  ➢ Loan to be paid in 4 years after project completion following a grace period of 6 months

✓ Well-structured qualification criteria, transparent project evaluation

✓ Financial Model : Project Partnership

✓ No focus on sector or firm size
Profile of Beneficiaries

**Enterprise Size**
- LARGE: 23%
- SME: 77%

**Enterprise Age**
- 0-10 years: 49%
- 11-20 years: 25%
- 21-30 years: 18%
- >30 years: 8%

**Project Size**
- 0-$100,000: 16%
- $100,000-$500,000: 62%
- $500,000-$1,000,000: 18%
- $1,000,000-$2,000,000: 4%

Profile of Beneficiaries

REGIONS

- Marmara: 63%
- Blacksea: 1%
- Central Anatolia: 19%
- Aegean: 13%
- South-East: 1%
- Mediterranean: 1%
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- Aegean: 13%
- South-East: 1%
- Mediterranean: 1%
- Blacksea: 1%

SECTORS

- Information Technologies: 20%
- Machinery: 31%
- Materials: 18%
- Chemistry: 7%
- Biotechnology: 7%
- Electronics: 21%
Profile of Beneficiaries

✓ Content of supported projects:
  - Product Material Improvement (85%)
  - New Product Development (75%)
  - Process Improvement (69%)

✓ All SMEs consider the support as an essential financing tool for similar projects (35% of SMEs report that without the support the project would not have started)

✓ Technical Success Rates
  - 73% for product development projects, 100% for process improvement projects

✓ Commercialization
  - 88% is expected to yield commercial applications, but additional support is needed

✓ 88% consider developing new R&D projects in 3 years, 63% consider to reapply for TTGV support.
Compliance to International Treaties

- **Definition of R&D**

  Oslo / Frascatti Manual

  “Research and Experimental Development (R&ED) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. R&ED covers three activities: Basic Research, Applied Research and Experimental Development.”

- **WTO “Agreement on Subsidies and Countervailing Measure”**

  Coverage of supports provided by TTGV is a subset of what is allowed under the provisions of Article 8.2

- **European Commision Decision (No 2002) – Concerning the FP6**

  TTGV supports are in line with the provisions of FP6 supports.
SME issues in the EU:
A selective overview
The Bologna Charter on SME Policies – OECD

• Financial barriers to innovation to be removed (equity financing and related services for innovative start-ups, risk-sharing programs and measures to R&D and innovation);

• Other non-financial support (networks, mentoring, clusters etc.)

Barcelona Target and Lisbon Strategy - EU

• EU to become the most competitive and dynamic knowledge based economy in the world

• R&D spending to increase to 3% of GDP, 2/3 by private businesses

• Improve environment for private research investment, R&D partnerships and high-technology start-ups – create innovative forms of partnerships

• Redirect public expenditure towards accumulation of capital – both human and physical and support RTDI

• Emphasis on clean technologies, frontier technologies including lifesciences
✓ European Charter for SMEs
  • Foster technology cooperation and sharing, develop more effective RTDI programs focused on commercial application of knowledge and technology
  • Public procurement

✓ Innovative Public Procurement – Advocacy to the EC
  • Public procurement as an effective demand-side mechanism for increasing private sector R&D

✓ SBIR and SME Set-asides - USA
Redirect state-aid resources towards to horizontal objectives of common interest, including cohesion objectives – EC (SMEs and RTDI are horizontal objectives)
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Basic SMEs</td>
<td>No or few R&amp;D activities – No R&amp;D capability</td>
<td>70%</td>
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<tr>
<td>Technology Adopting SMEs</td>
<td>Adoptors of existing technologies – low innovative SMEs – R&amp;D capability</td>
<td>20%</td>
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<tr>
<td>Leading Technology User SMEs</td>
<td>Developing or combining existing technologies on an innovative level</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Technology Pioneer SMEs</td>
<td>High level of R&amp;D activities</td>
<td>&lt;3%</td>
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✓ SMEs in FP6
  • Participate in Integrated Projects (IP), STREP (Specific Target Research Projects), CRAFT (Co-operative Research Projects), Collective Research
  • No specific SME mechanism – SME success rates have been low
  • EC considers SME programs as National Programs

✓ FP7
  • No specific SME mechanism, still SMEs are considered critical (both politically and economically – 65% of EU GDP)
  • SMEs account for significant RTDI investment gap with USA

✓ ERA-NET
  • EC considers sufficient to coordinate national programs, more emphasis
  • FP7 may have quite a few SME RTDI ERA-NETs
SMEs and Knowledge Economy
Türkiye as a Knowledge Economy

Clear underspending for RTDI

Türkiye vs ECA Region – Benchmarks for Select KE Indicators

World Bank - 2003
210,000 SMEs in manufacturing sector (99.6% of all enterprises)
64.3% of all manufacturing employment
10% of exports
26.5% of value-added
Ave. size is 3.1 employees (95% employ between 1-9)
(Source : SIS 2000)

Statistical data on detail profiles especially on RTDI is lacking.
### SMEs and RTDI in Türkiye

**Cost Items involved in Technological Innovation Activities**

<table>
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<tr>
<th>Involved in Technology Innovation Activities</th>
<th>R&amp;D Activities by Source</th>
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<tr>
<td></td>
<td>Inhouse</td>
<td>Service Procur.</td>
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<tr>
<td>10-19</td>
<td>29.4%</td>
<td>19.1%</td>
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<td>20-49</td>
<td>21.5%</td>
<td>11.1%</td>
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<tr>
<td>50-99</td>
<td>28.4%</td>
<td>54.7%</td>
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<tr>
<td>100-249</td>
<td>34.5%</td>
<td>6.2%</td>
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While approx. 40% of projects are found to be performed in collaboration with Univ. and other R&D organisations, only 7% cite Univ. as source of information.
SMEs and R&D Finance

Share of business R&D by size class of firms, 2001

- Firm with fewer than 50 employees
- Firms with 50 to 249 employees

Share of government-financed business R&D, by size class, 2001

- Firms with fewer than 50 employees
- Firms with 50 to 249 employees

OECD, STI Scoreboard 2003
- Increase RTDI spending to 2% of GNP. (PM Erdoğan) (timeframe? 10 years?) Current level is 0.65% of GNP. (40% is spent by the private businesses)

- Assuming the target implies business spending to improve to 60% (consistent with EU objective), i.e. 1.2% of GNP. (~3 Billion USD at the current level of GNP – or an approx. increase of 2.5 Billion USD)

- A lot of stimuli will clearly be needed for the jump

- Policies and strategies?

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<tr>
<th>Gap</th>
<th>Target</th>
<th>Strategy</th>
<th>Tool</th>
<th>M&amp;E</th>
<th>Synthesis</th>
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<td>✓</td>
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Can export driven growth finance business RTDI?

Turkish equity finance market seriously lags. Can KB growth regenerate itself - critical mass?

Start-up (EU ave. 0.05% of GNP) and growth VC. (0.03% of GNP vs. 0.3% in the EU)
Supporting enterprises through different phases of development with integrated supports,
Follow-up paths
✓ Public funding for business RTDI: not a question of “if” or “why” but “how”.

✓ Need to think beyond delivery of finance. More emphasis on structure and added-value (non-financial supports).

✓ For better integration with EU programs, need to develop national programs

✓ Need to develop new and innovative delivery methods/mechanisms. (Israeli Model for VC? – technology oriented VC)

✓ Should emphasize Monitoring and Evaluation of public funding, especially in terms of addionality and attribution aspects. Better policy making.

✓ Policy coordination of RTDI at the national level. A working National Innovation System. Role and mandate of BTYK – delivery mechanisms?