

2023'e
Doğru
TÜBİTAK ile
Geleceğe
Bakış



TÜBİTAK's New Mission in Turkish R&D&I Ecosystem

Prof. Dr. Hasan MANDAL
President of TÜBİTAK

14 November 2018



By year 2023:

(100th Anniversary of Turkish Republic)

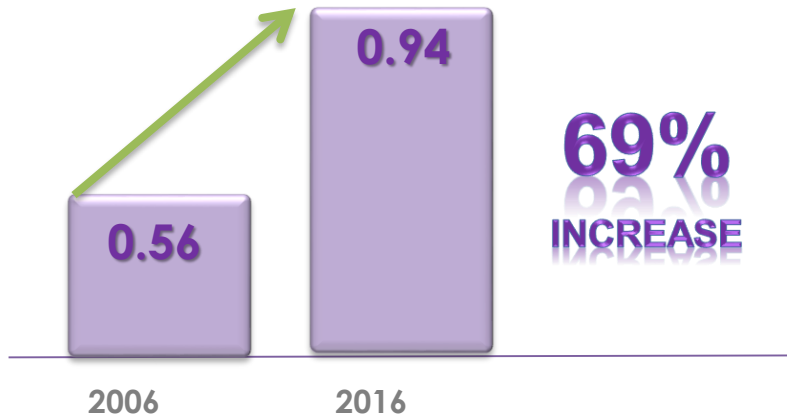
- **Among the Largest 10 Economies**
- **500 M USD Annual Exports**
- **10% High Tech Products in Exports**
- **Among Top 20 countries in Global Innovation Index**
- **At least 3 universities from Turkey in top 100 Universities in Global University Rankings**

Tools for National 2023 Targets

Research – Technology Development – Innovation – Qualified HR

Significant Increase in RDI Figures

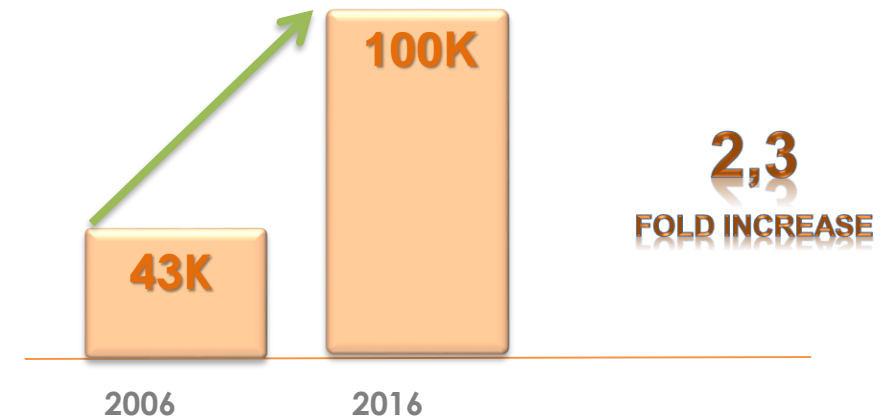
R&D Intensity (%)



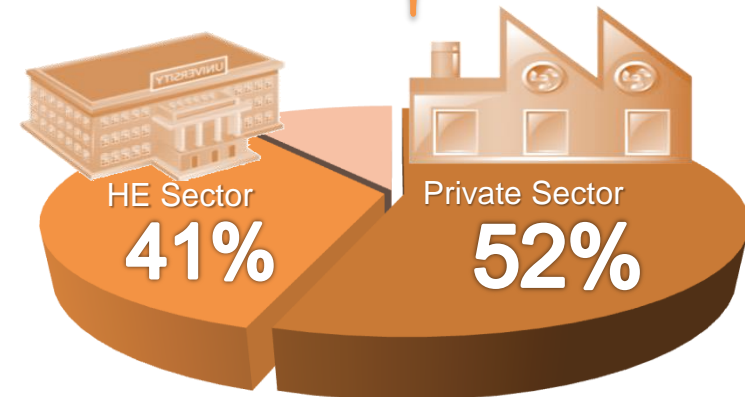
- **2016** → R&D expenditures **18.4 billion PPP \$**
- Growth rate for last ten years: **251%**



Total FTE Researchers

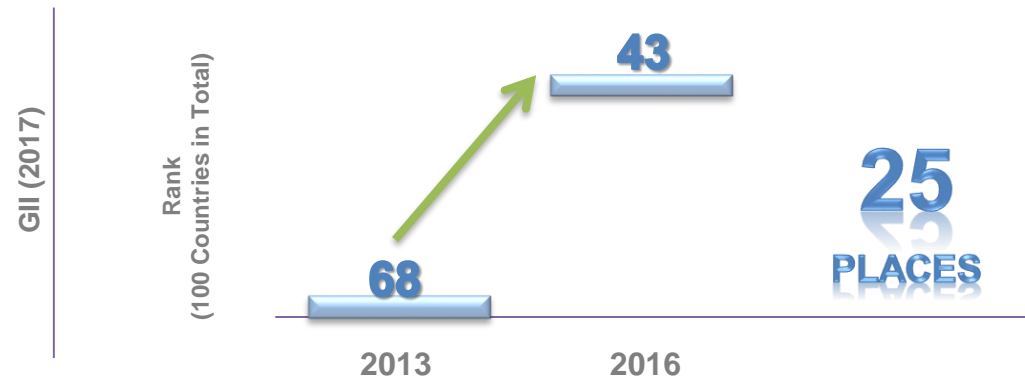


- **2016** → Total FTE R&D Personnel **137K**

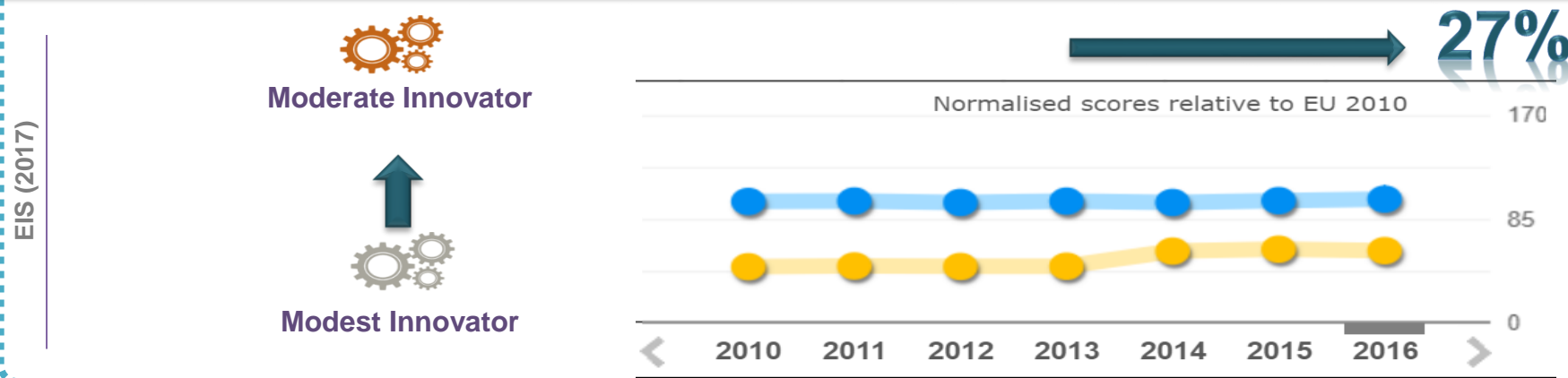


Turkey Jumped League in Innovation

According to Global Innovation Index (GII) 2017
Turkey jumped 25 places up to its level in 2016.



According to European Innovation Scoreboard (EIS) 2017 Turkey is a Moderate Innovator.
Turkey has jumped leagued in EIS 2015



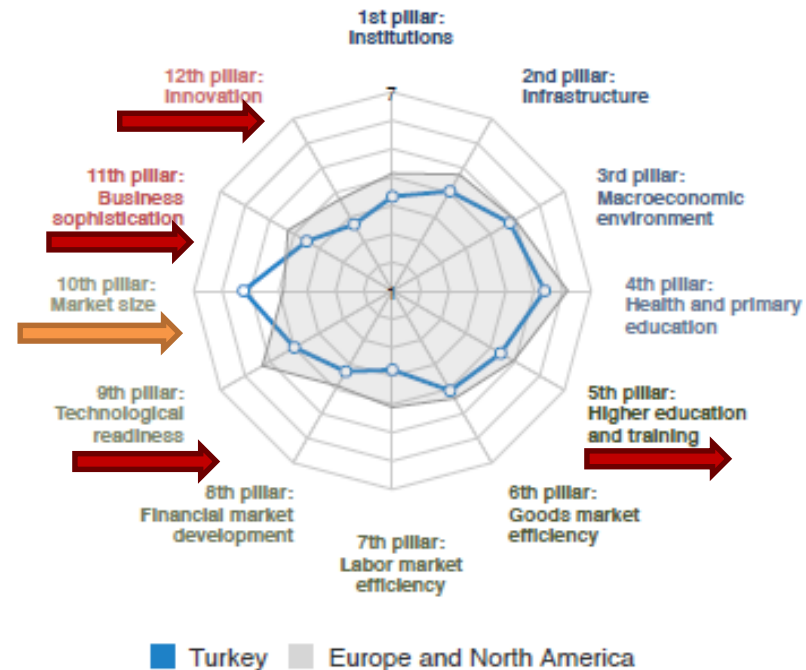
Key indicators, 2016

Source: International Monetary Fund; World Economic Outlook Database (April 2017)

Population millions	79.8	GDP per capita US\$	10,742.7
GDP US\$ billions	857.4	GDP (PPP) % world GDP	1.66

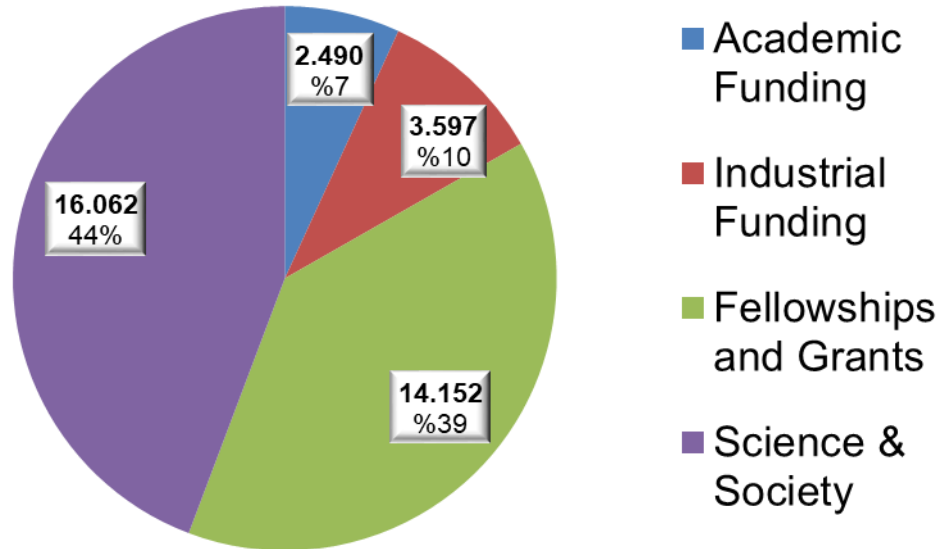
Performance overview

Index Component	Rank/137	Score (1-7)	Trend	Distance from best	Edition	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Global Competitiveness Index	53	4.4	—		Rank	43 / 144	44 / 148	45 / 144	51 / 140	55 / 138	53 / 137
Subindex A: Basic requirements	60	4.8	—		Score	4.5	4.5	4.5	4.4	4.4	4.4
1st pillar: Institutions	71	3.8	—								
2nd pillar: Infrastructure	53	4.5	—								
3rd pillar: Macroeconomic environment	50	5.1	—								
4th pillar: Health and primary education	84	5.6	—								
Subindex B: Efficiency enhancers	51	4.4	—								
5th pillar: Higher education and training	48	4.8	—								
6th pillar: Goods market efficiency	53	4.5	—								
7th pillar: Labor market efficiency	127	3.4	—								
8th pillar: Financial market development	80	3.8	—								
9th pillar: Technological readiness	62	4.4	—								
10th pillar: Market size	14	5.5	—								
Subindex C: Innovation and sophistication factors	66	3.7	—								
11th pillar: Business sophistication	67	4.0	—								
12th pillar: Innovation	69	3.3	—								

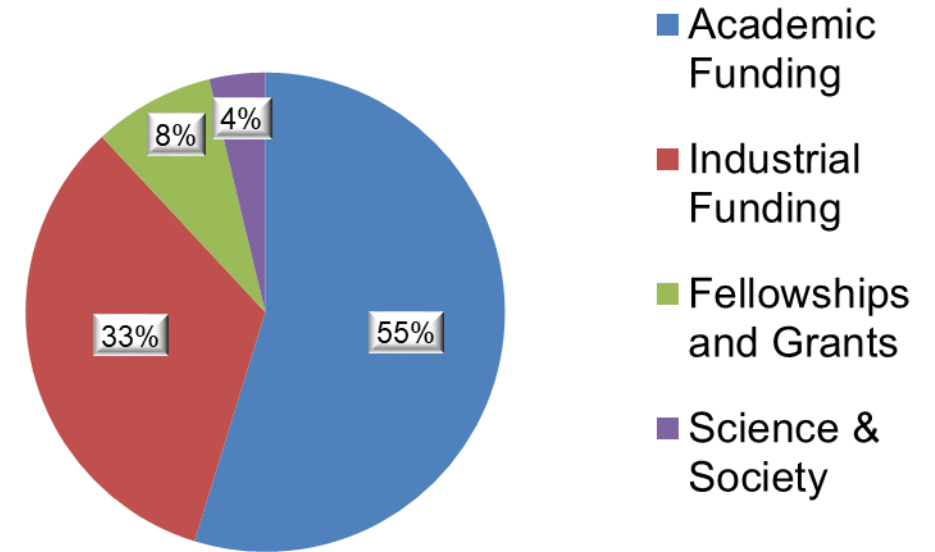


In 2017 and 2018 as of September, **36,301** projects/experts received funding and **3 Billion TL** was transferred.

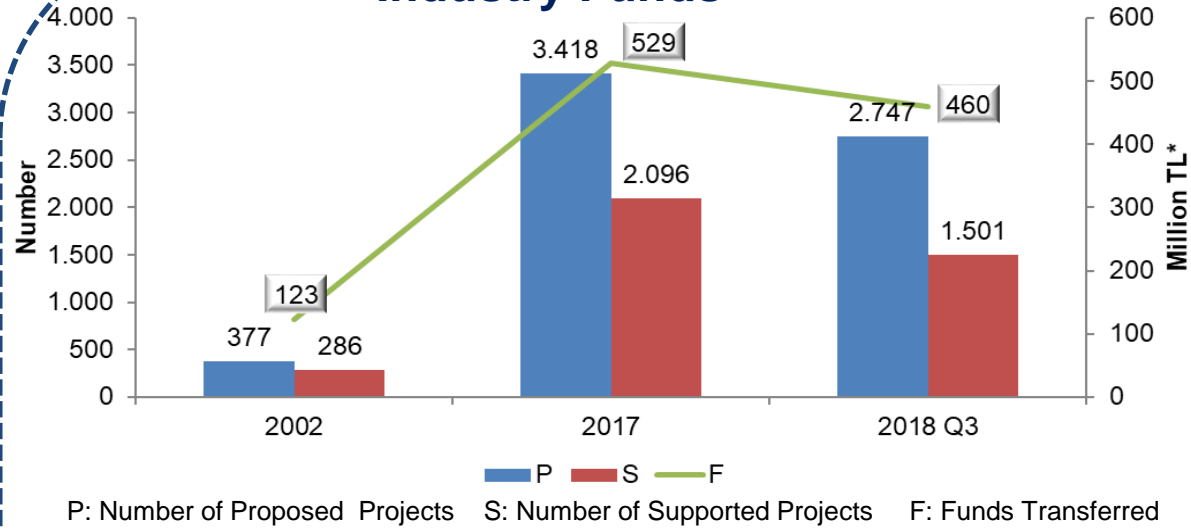
In 2017 and 2018 as of September, Distribution of Projects Supported



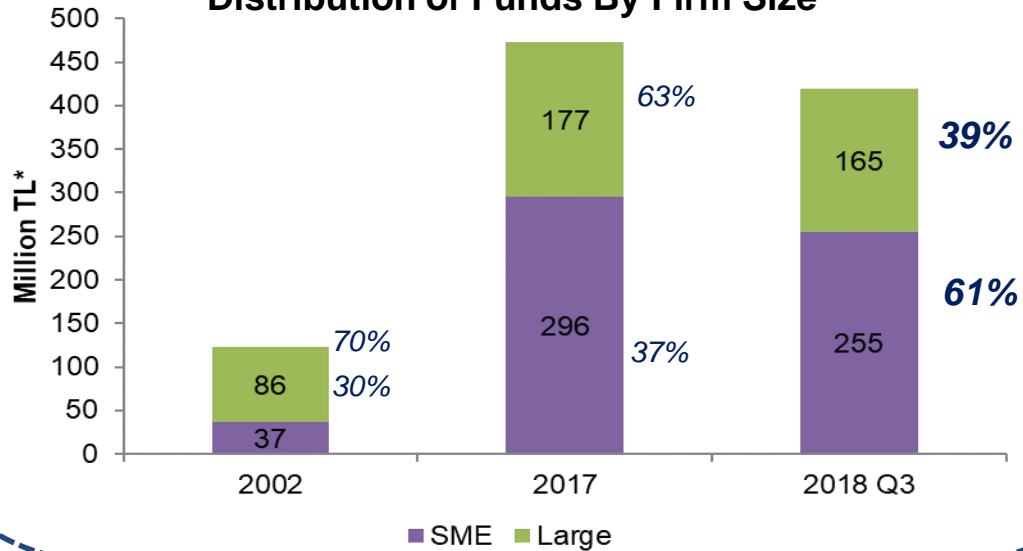
Distribution of Transferred Amount to Institutions



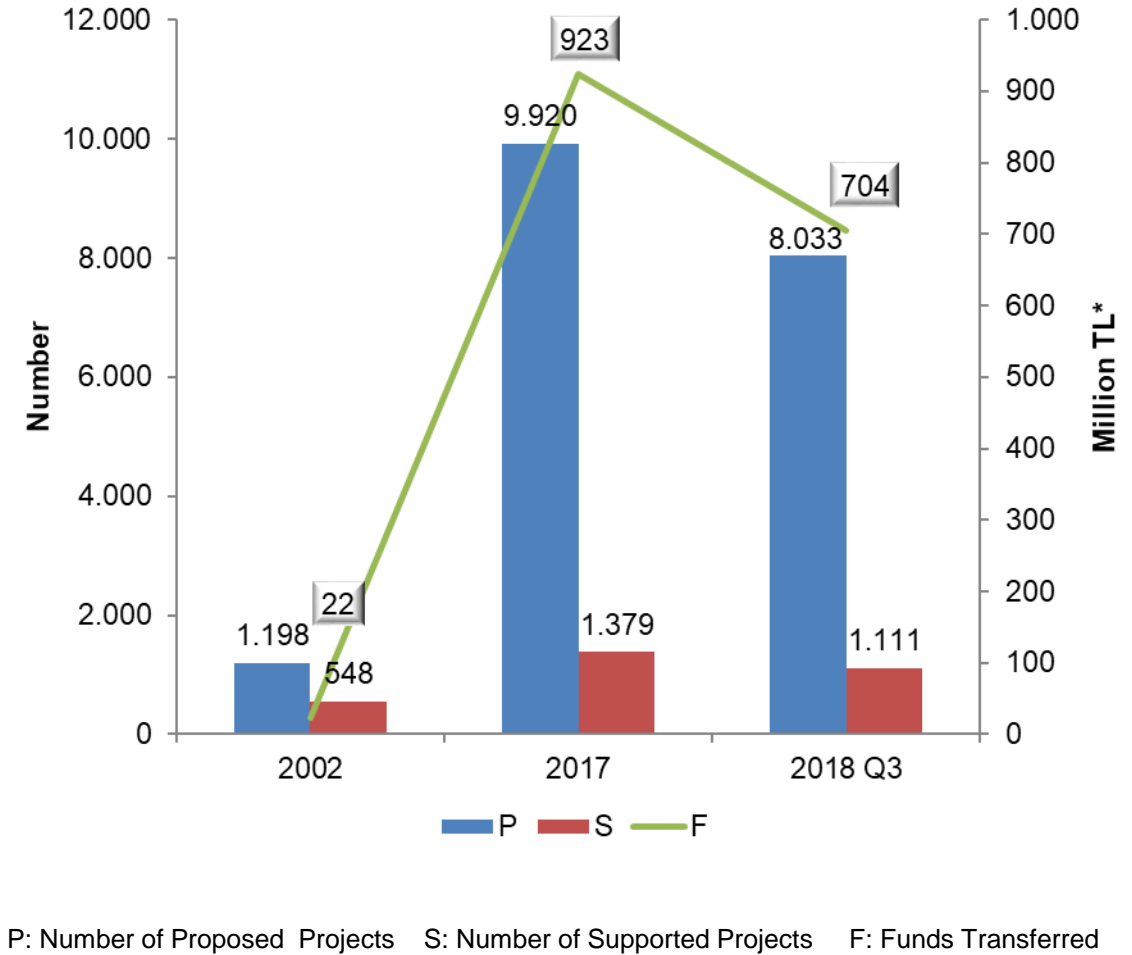
Industry Funds



Distribution of Funds By Firm Size*



Academic Research Funds



TÜBİTAK
Beyond 2018

Main Strategy:

Qualified Knowledge & Qualified Human Resources

Focussed to National Targets

Within the Research, Technology Development and Innovation Ecosystem

Product Development

Technology Development
Applied Science and Research

Basic Scientific Research

Qualified Knowledge:

- Tools to facilitate **systematic flow of knowledge among the value chain** (Interactions with the end user is important)
- **Focussed knowledge** generation
- **Meeting the targets/outputs based** gradual (phased) support

Qualified Human Resources:

- **Building the critical mass**, rather than supporting the individuals
- **Triggering at the institutional level**
- **Human resources** mobility to **facilitate inter-sectoral (academia-industry) knowledge flows**

Pillars of Further Improvement



**Mission Oriented
Approaches**



**Enhanced Interaction in the
Ecosystem**



Support to Frontier Research



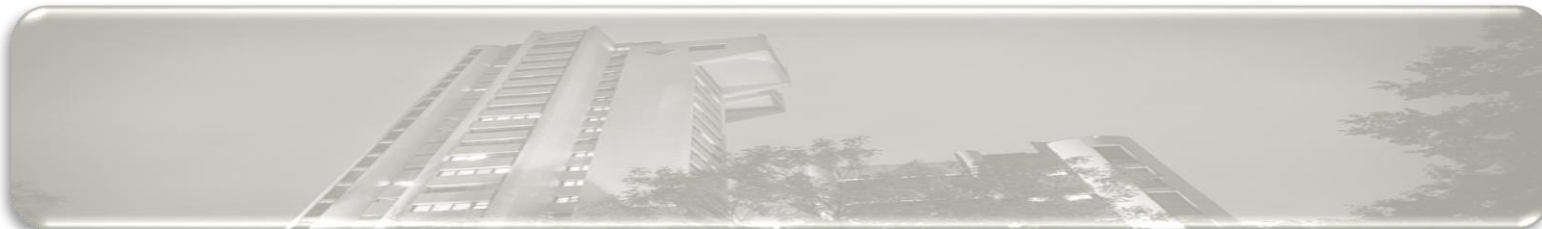
Enhancing Skilled HR



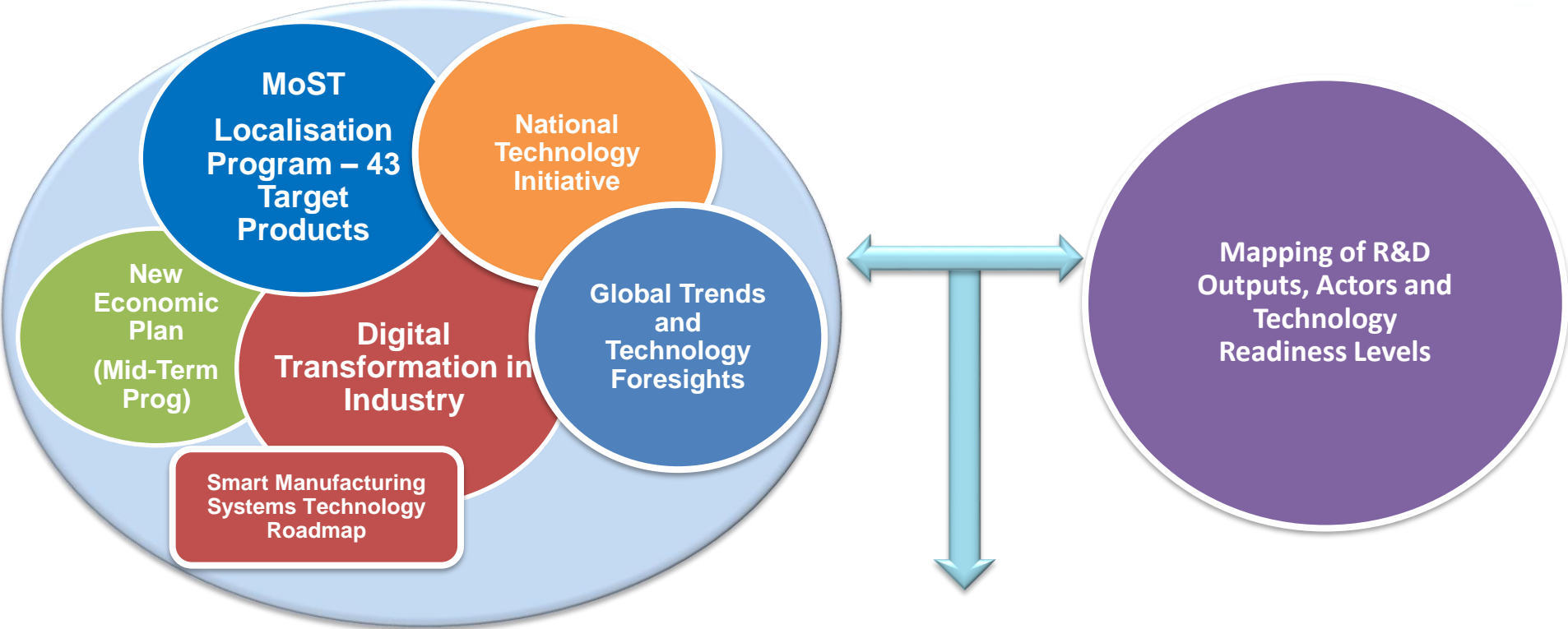
**Technology Based Start-ups
& Innovation Interfaces**



**Focussed International
Cooperation**



Inclusive, Transparent and Flexible Strategies



Mission Oriented Support Programs and Call-Based System

**Industrial RDI
(1511)**



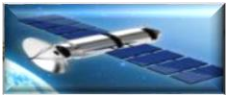
IoT - M2X

**Academic R&D
(1003)**



Embedded Systems

**R&D for Public
Institutions' Needs
(1007)**



National
Communication
Satellite

Pillars of Further Improvement



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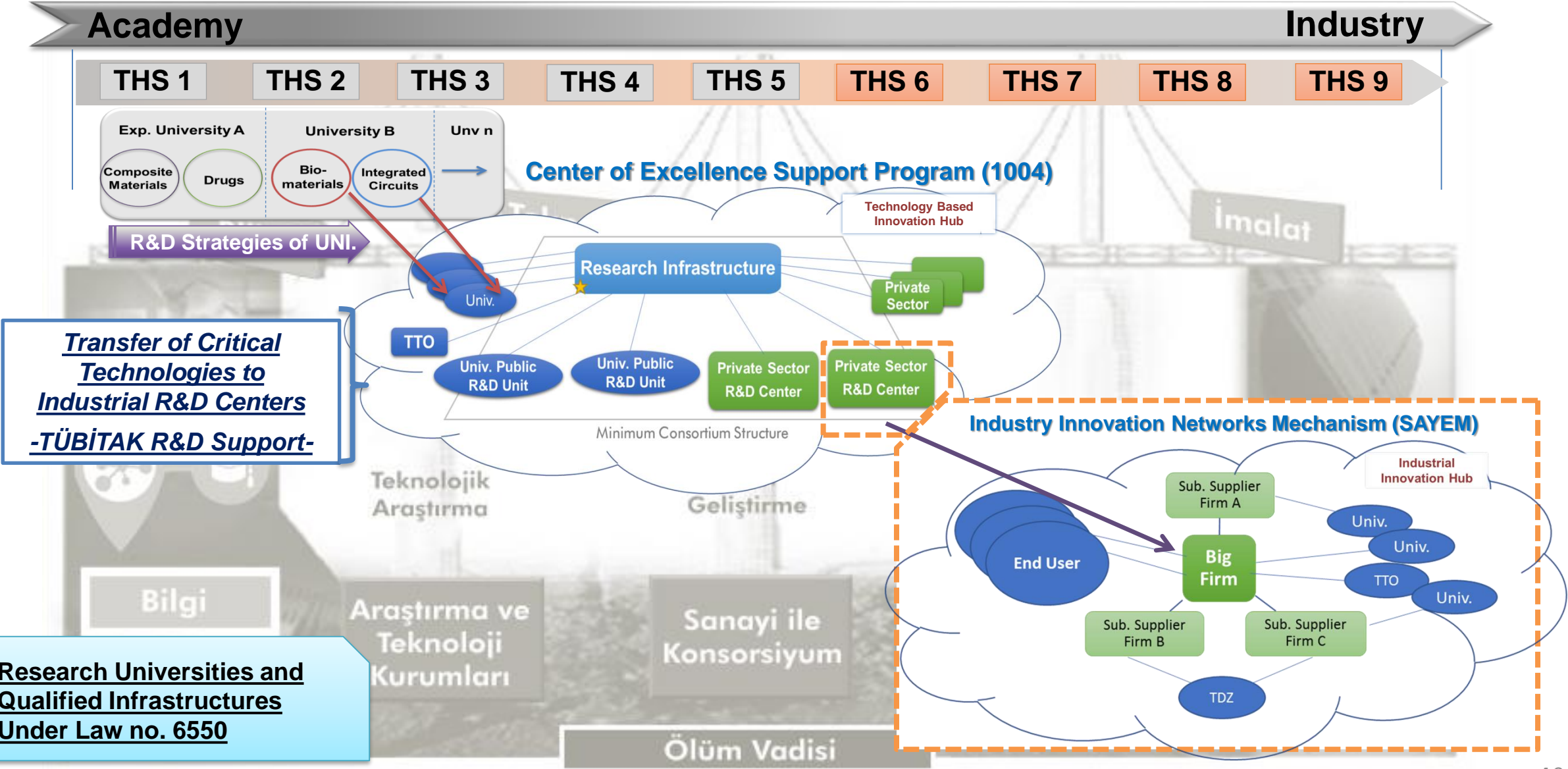


**Focussed International
Cooperation**



Inclusive, Transparent and Flexible Strategies

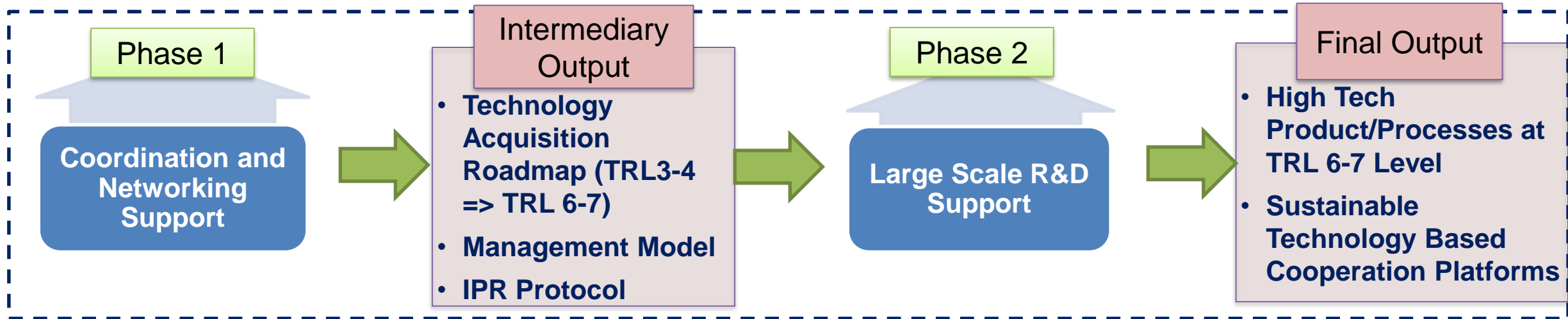
Both Programs are Open to International Partners



★ Research Universities and Qualified Infrastructures Under Law no. 6550

TÜBİTAK 1004 High Technology Platforms Call

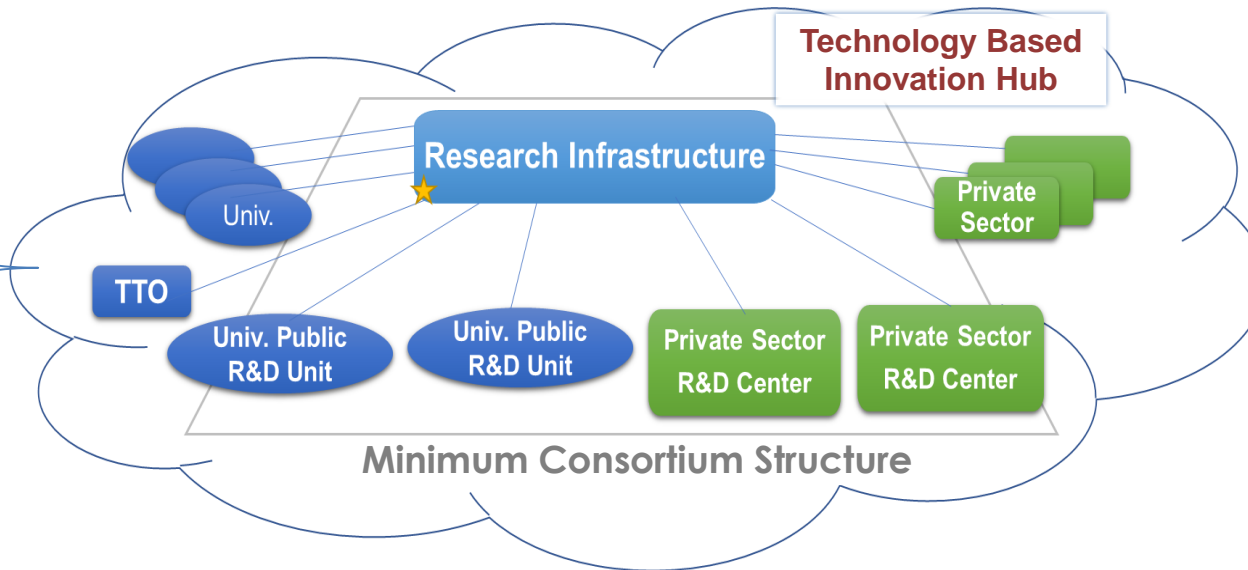
Two Phased Support



Transfer of critical technologies to Private Sector R&D Centers is targeted.

1004 - TÜBİTAK Center of Excellence Support Program

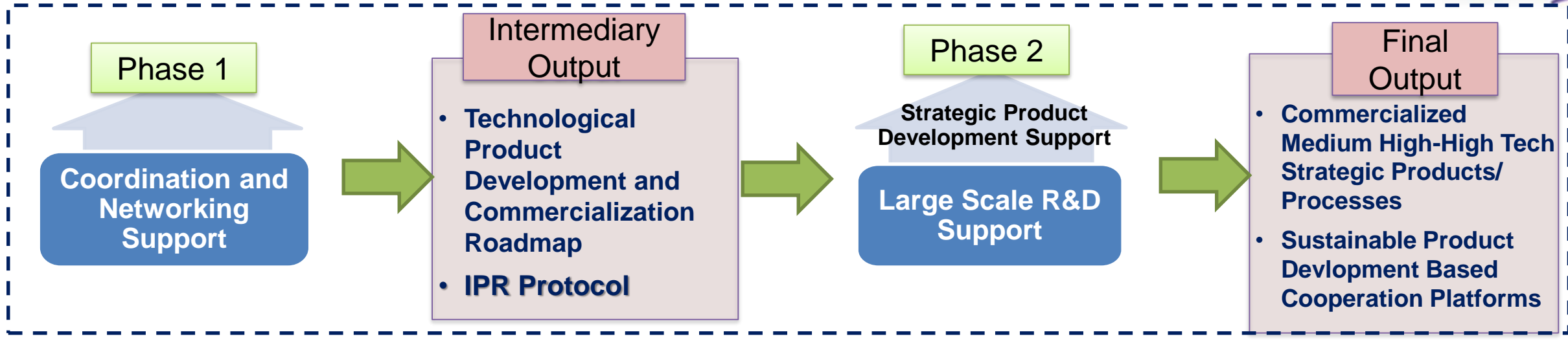
Research Universities and Qualified Infrastructures Under Law no. 6550



- **Call:** 29 June – 28 September 2018
- 19 project proposals
- Evaluation in progress
- Drugs, Diagnostic Kits, Vaccines, Biomaterials, Magnetic Materials, Solar Energy, Advanced functional Materials, Medical Sensors, Electronic and Optic Components, 3D Printers, THz Sensor Systems, Medical Devices, Lazer Based Advanced Manufacturing

Industry Innovation Networks Mechanism (SAYEM)

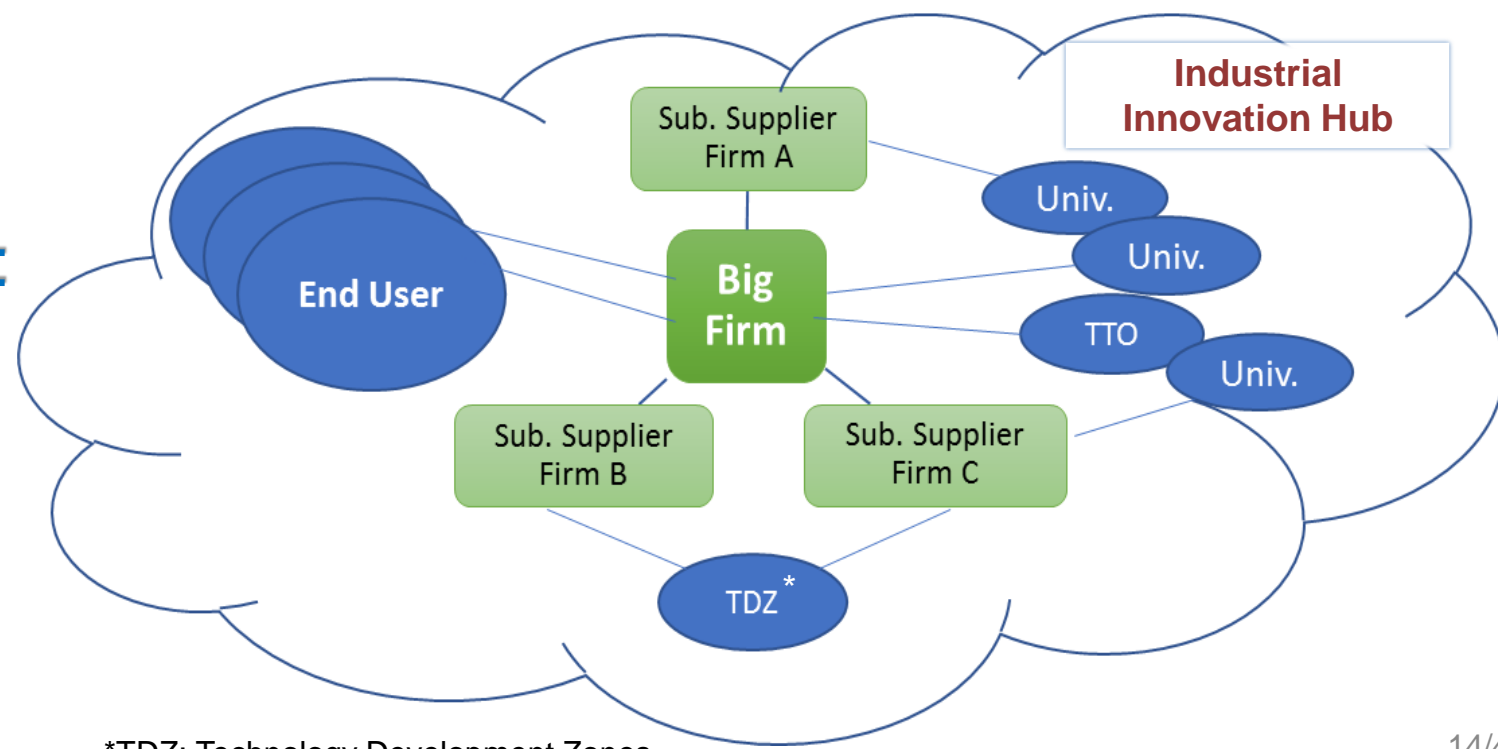
Two Phased Support



1) Innovation networks coordinated by Private Sector R&D Centers will be supported

2) Industry clusters in Special Industry Zones will be prioritized

Industry Innovation
Networks Support



*TDZ: Technology Development Zones

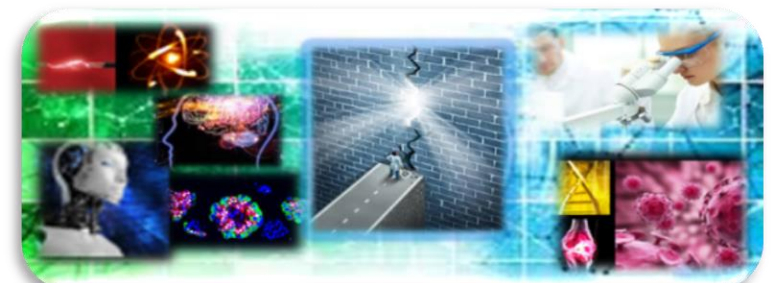
Pillars of Further Improvement



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**Support to Frontier Research
estek**



Enhancing Skilled HR



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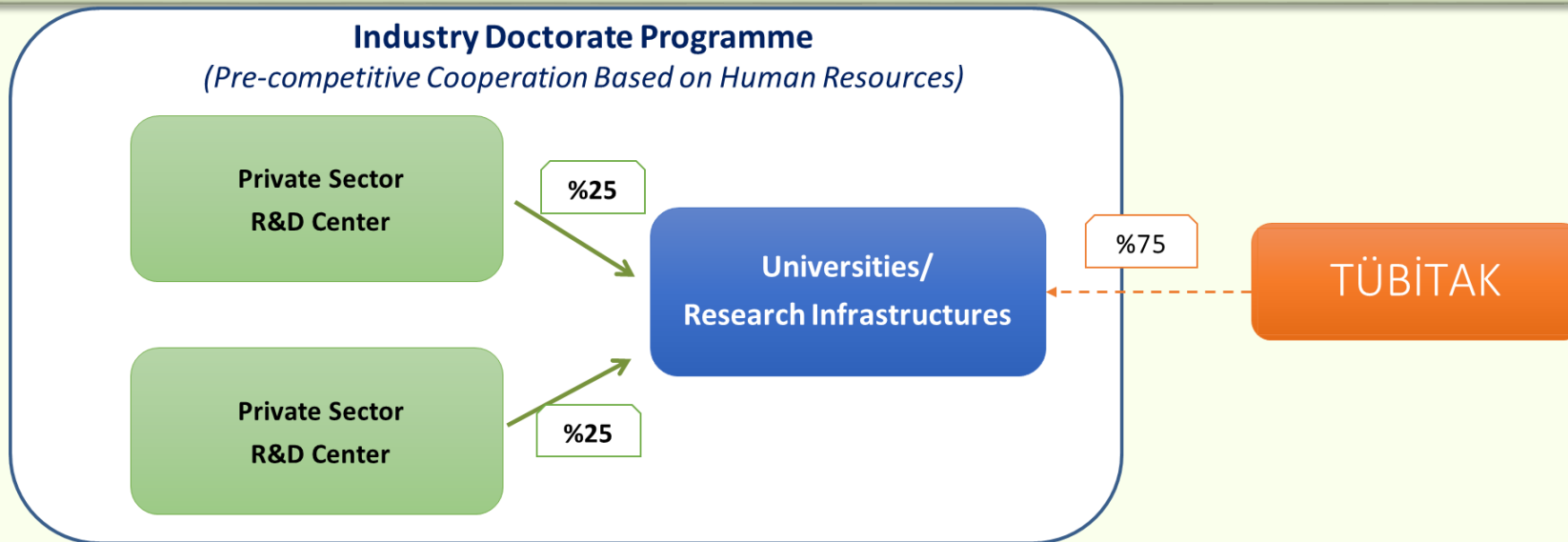
University



Industry



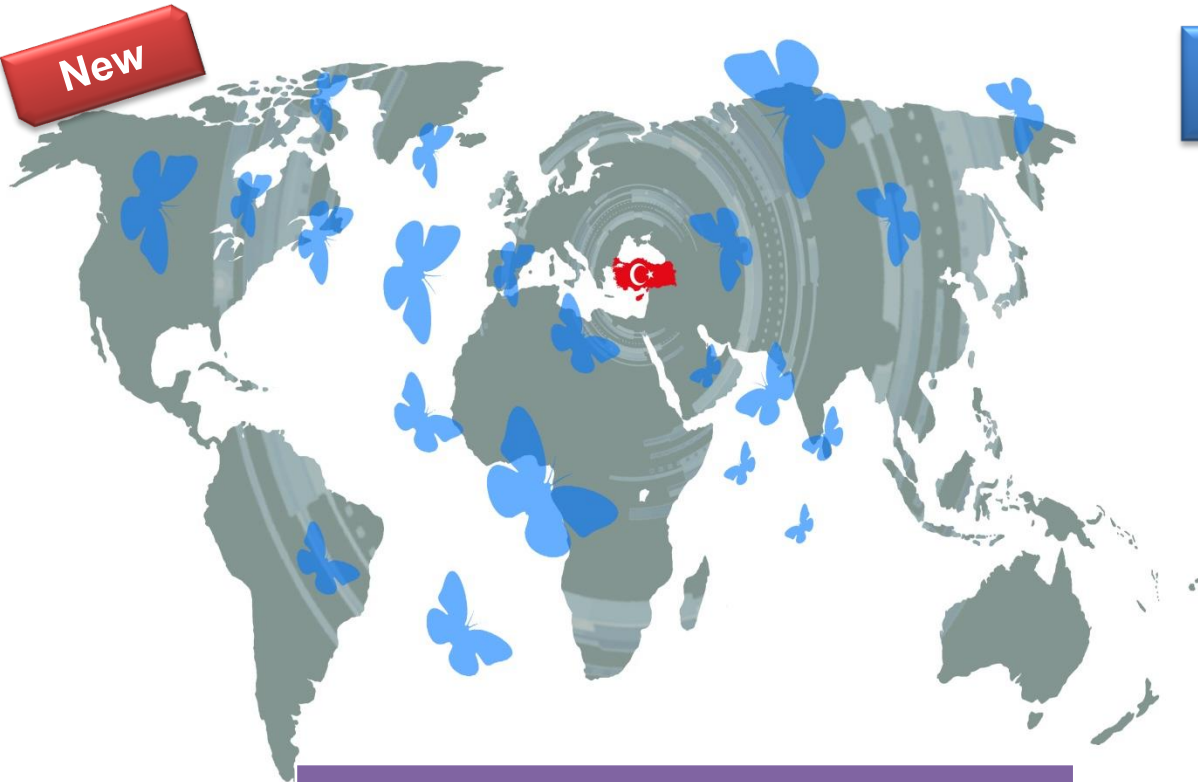
Industrial Doctorate Programme -- Mission Oriented PhD Support --



- Universities submit an annual plan according to the priority areas determined TÜBİTAK
- TÜBİTAK supports the PhD candidates and provides employment support.



Call: 9 July – 15 October 2018



Supported Items

Living Allowance (monthly)

Starting Research Budget
Allocation

Research Grant

Family Allowance (monthly)

Support for Travel Expenses

Establishment of Research Group
Fellowship for max 5 PhD
students

Host Institution Overhead
Support (monthly)

Insurance Support for Family
Members

Young Researchers

Early stage researchers who

- have **completed their PhD less than 4 years ago** OR
- have **4 years research experience after getting a bachelor's degree**

**Call will be published by
the end of 2018**

Experienced Researchers

- Having a record of **at least 5 years of independent academic work after completing PhD** OR **working at least at the level of Assistant Professor** OR **a Research Group Leader** OR
- **6 years research experience after getting a bachelor's degree**

Qualifications for Researchers

- **Placed in Highly Cited Researchers** list (from Thomson Reuters) or
- His/Her previous institution abroad:
 - to be ranked among top universities in the QS World University Rankings by Subject or
 - to be ranked among **R&D ranking of the world top 2500 companies according to Industrial R&D Investment Scoreboard**

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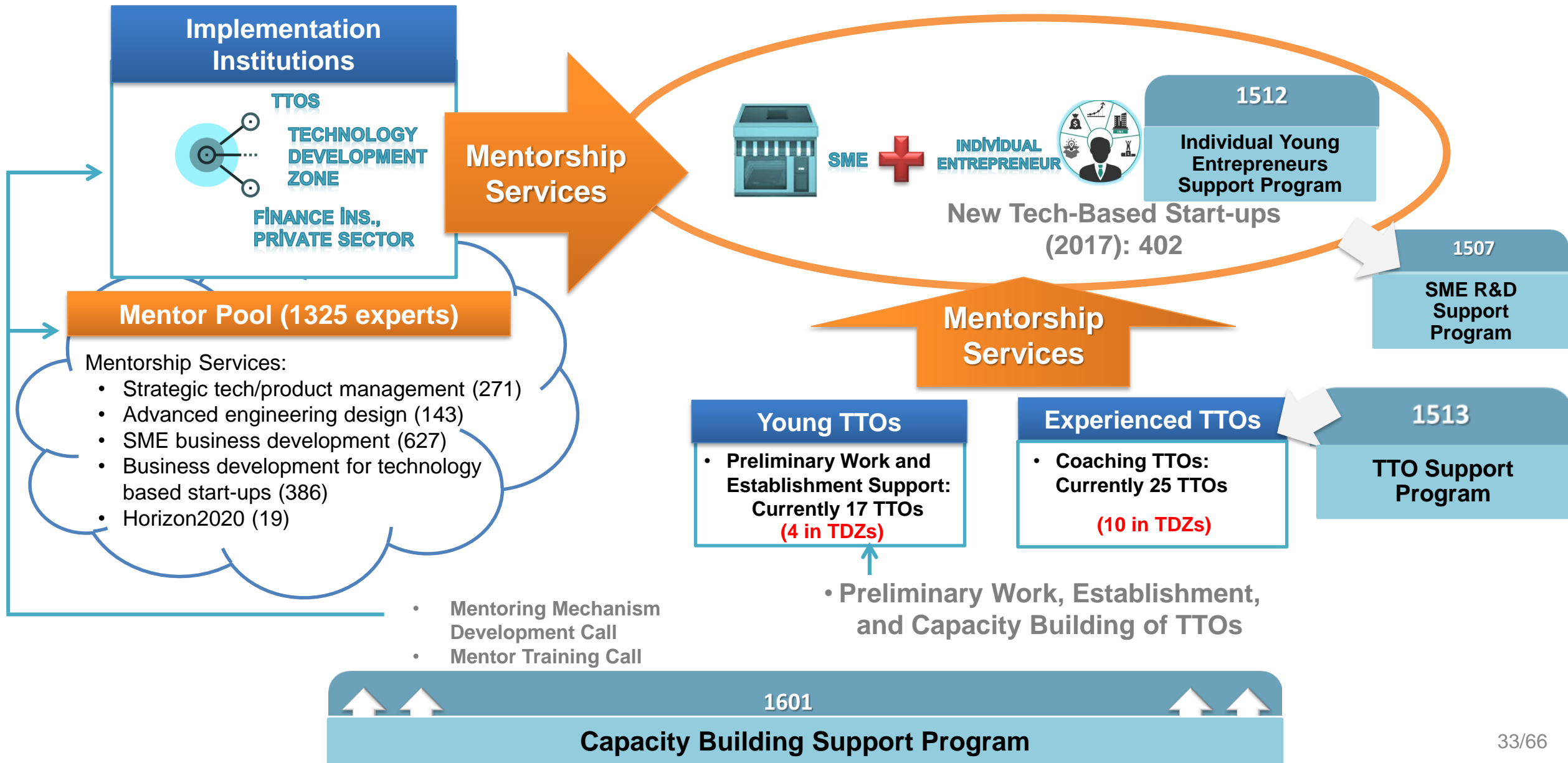


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Inclusive, Transparent and Flexible Strategies

Technology Based SME/Startup Ecosystem



Sustainable venture capital ecosystem for technology-based early stage entrepreneurship is activated.

Startup

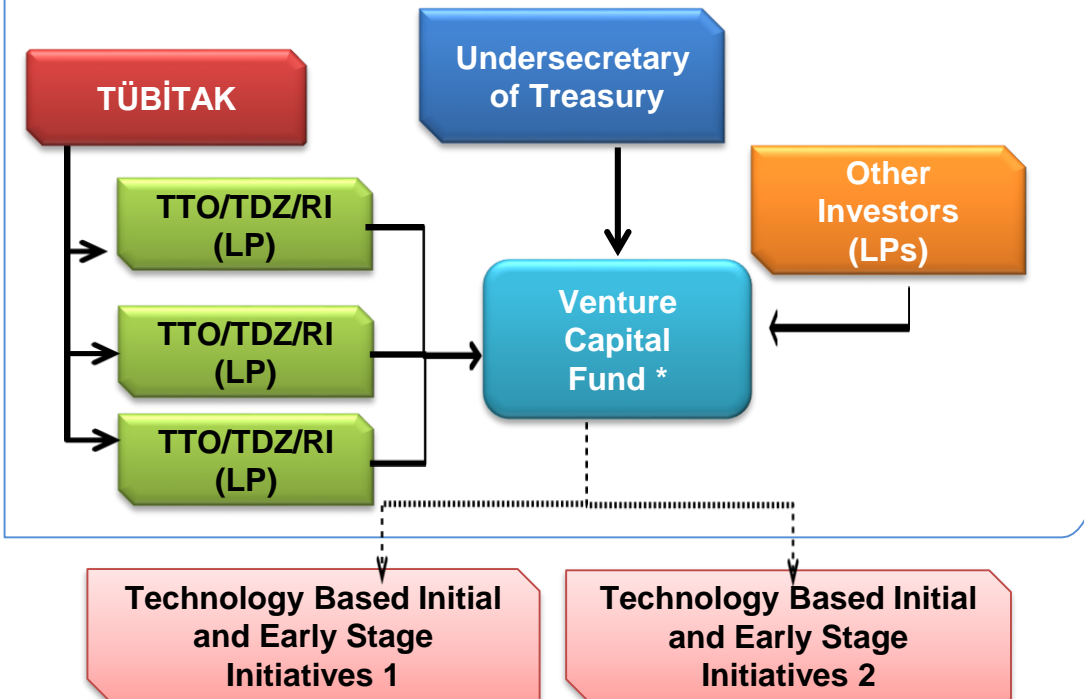
Growth

Maturation

Technology-Based Early Stage Entrepreneurship Support

«Open to Investors from
Abroad»

Venture Capital Fund Model



Call Agenda: 14 June – 30 September 2018 (Evaluation in Progress)

- 10 venture capital fund proposals received from 23 institutions (5 in TR, 5 abroad)
- 980 Million TL – foreseen fund commitment at the first closure
- 100 Million TL TUBITAK funding to create 1 Billion TL sources (predicted to increase to 1,8 Billion TL at the second closure)

Added Value:

- Increase the amount of funding for early stage entrepreneurship with high risk
- Increase the accumulation of know-how on IP valuation and commercialization experience on TDZs, TTOs and RIs in the medium and long term.
- Faster and easier commercialization of R&D results
- Increasing Number of Players in Venture Capital Ecosystem
- Establishment of Specialized Venture Capital Funds of TDZs, TTOs and RIs in medium / long term

Target and Performance Based Support Program

For each TTO:

Phase 1

Development of Institutional Capacity

- %80 support ratio
- Max 5 years of support for each phase
- Transition period identified between phases
- Panel evaluation
- Site visits to TTOs having performance score above threshold

Phase 2

Target Based Growth

- %40-%80 support ratio based on the TTO's performance score

Expected Impact:

- Support program monitored with respect to targets compatible with National STI strategies
- Dynamic structure which self improves via updates from regular feedbacks, cooperation and learning
- Determination and exploitation of best practices of TTOs via performance evaluation
- Flexibility in budgeting and expenditure

Same Set of
Performance
Indicators

Different Targets
According To The
TTOs' Own
Characteristics

Different Weights
in Calculation,
Encouraging
Different
Improvement Areas

Pillars of Further Improvement



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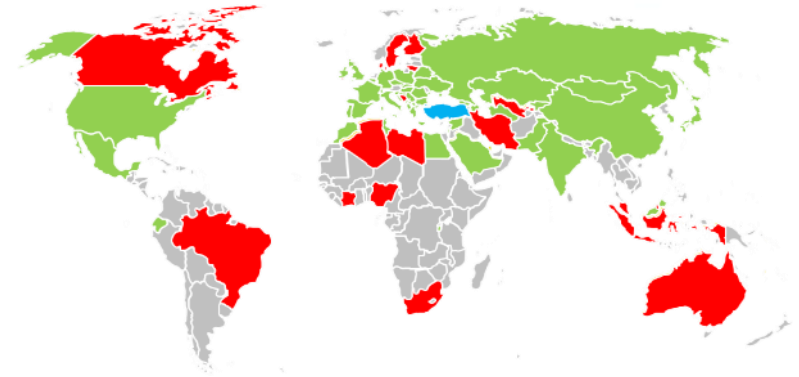


Inclusive, Transparent and Flexible Strategies



EU Framework Programs

- National Coordination Office since 2002
- 2014 – October 2018 → 636 Turkish partners in 463 successfully funded projects, 153.2 Milyon Euro* funds to Turkey



International Bilateral/Multilateral

- 59 agreements with 47 countries
- 350 ongoing international cooperation projects

Coordinator
Support



Marie-Curie
Pre-evaluation



Travel
Supports



ERC Improvement of
Advanced Grants



Awards



**New Supports and Awards for Encouraging
and Increasing the Participation to Horizon
2020**



**Cooperation with International
Organisations in Order to Increase Scientific
Visibility**

Strategic International R&D Projects



Focused R&D Collaborations with Global Leaders

International R&D collaborations

- with leading countries
- in emerging technologies in focus sectors

(High budget, high impact)



International Cooperation to Meet Industry's R&D Needs «Find a Partner and Propose»

- Collaboration in the areas of technology transfer



Strategic R&D Partnerships with Development Focus

- Development-oriented cooperation and technology transfer with developing and underdeveloped countries



Diplomacy-Oriented R&D Cooperations

- The use of R&D as a tool and communication with the countries where the cooperation is strategically perceived within the scope of foreign policy objectives

Pillars of Further Improvement



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Inclusive, Transparent and Flexible Strategies

Stakeholder Meetings with «Accomplish Together» Approach During the Planning of Upcoming Period in TUBITAK



**15 different events with
more than 650 participants**

Feedbacks

Assessments

Comments

Suggestions

Examples:

Consultation Meeting with
Enterprises Which Received
«Super Incentive»
Değerlendirme Toplantısı

«Vision of TUBITAK Towards
2023» Workshop

Consultation Meeting with
ERC Granted Academicians

Workshop on the Role of
Social Sciences and
Humanities in STI Ecosystem

Consultation Meeting With
Scientists Who Received
TUBITAK Awards and
Incentives

Consultation Meeting with
Technology Transfer Offices

Excellence Center Support
Program Stakeholder Meeting



A new support structure has been designed considering the new dynamics of changing global socio-economic system and national 2023 S&T vision

Industrial Supports (SADE)

General SADE

Thematic SADE

Interface Supports (AYDE)

- Implementation of proposal, evaluation, monitoring, fund transfers and closing procedures via the calls within the main pillars General SADE, Thematic SADE and AYDE
- Publishing of biannual **TEYDEB Workprogram (TİP)**. Call themes are indicated at the workprogram, which is approved by TÜBİTAK's

Objectives:

- Establishment of consortiums including SMEs, big enterprises and end users
- Considering the processes that enable product development from prototypes
- Support for capacity building activities such as accelerator program for entrepreneurship and innovation, mentoring
- Enabling the assessment of success and impact

Thank you for your attention