



ÜSİMP

ÜNİVERSİTE - SANAYİ İŞBİRLİĞİ
MERKEZLERİ PLATFORMU

**INCENTIVES (OTHER THAN FEE REDUCTIONS) TO
ENCOURAGE PATENTING FROM
UNIVERSITIES – DEVELOPING COUNTRY EXPERIENCE**

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*Sabancı University Nanotechnology Research Center, Istanbul,
Turkey*

Vice-President of USİMP

A short Introduction

An academician of 35 years with experience in R&D&I arena and University administration.

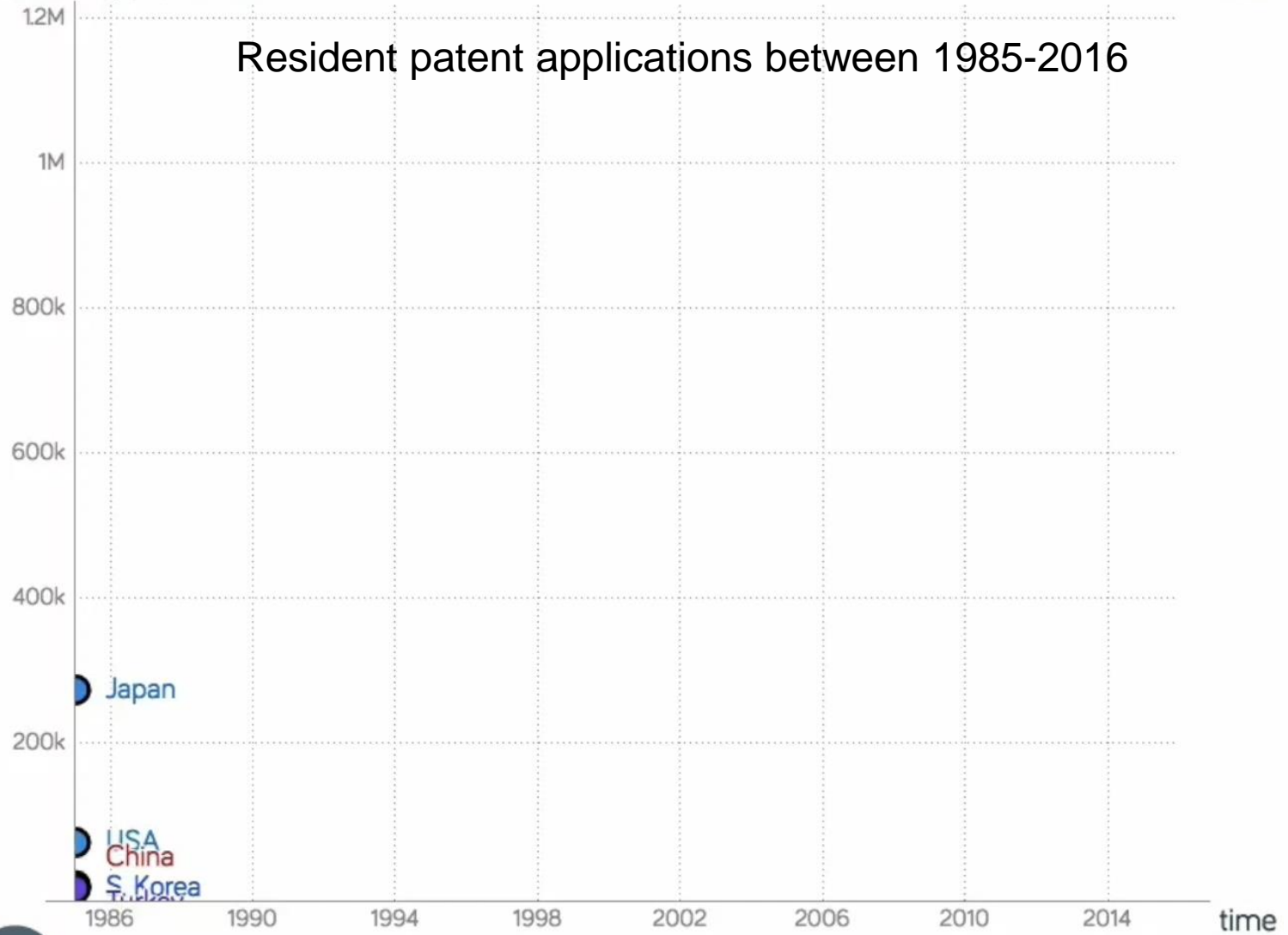
Currently,

- Director of SUNUM Sabanci University Nanotechnology Research Center (2017 -)
- Vice-President of USIMP –University Industry Collaborations Platform of Turkey (2008 -), Representative of USIMP on International Platforms
- Representative in international organisations (ASTP, ATTP, AUTM, EuKTS, EPO Academy)
- RTTP-Registered Technology Transfer Professional -2016
- EuKTS Grandfather certificate -2016

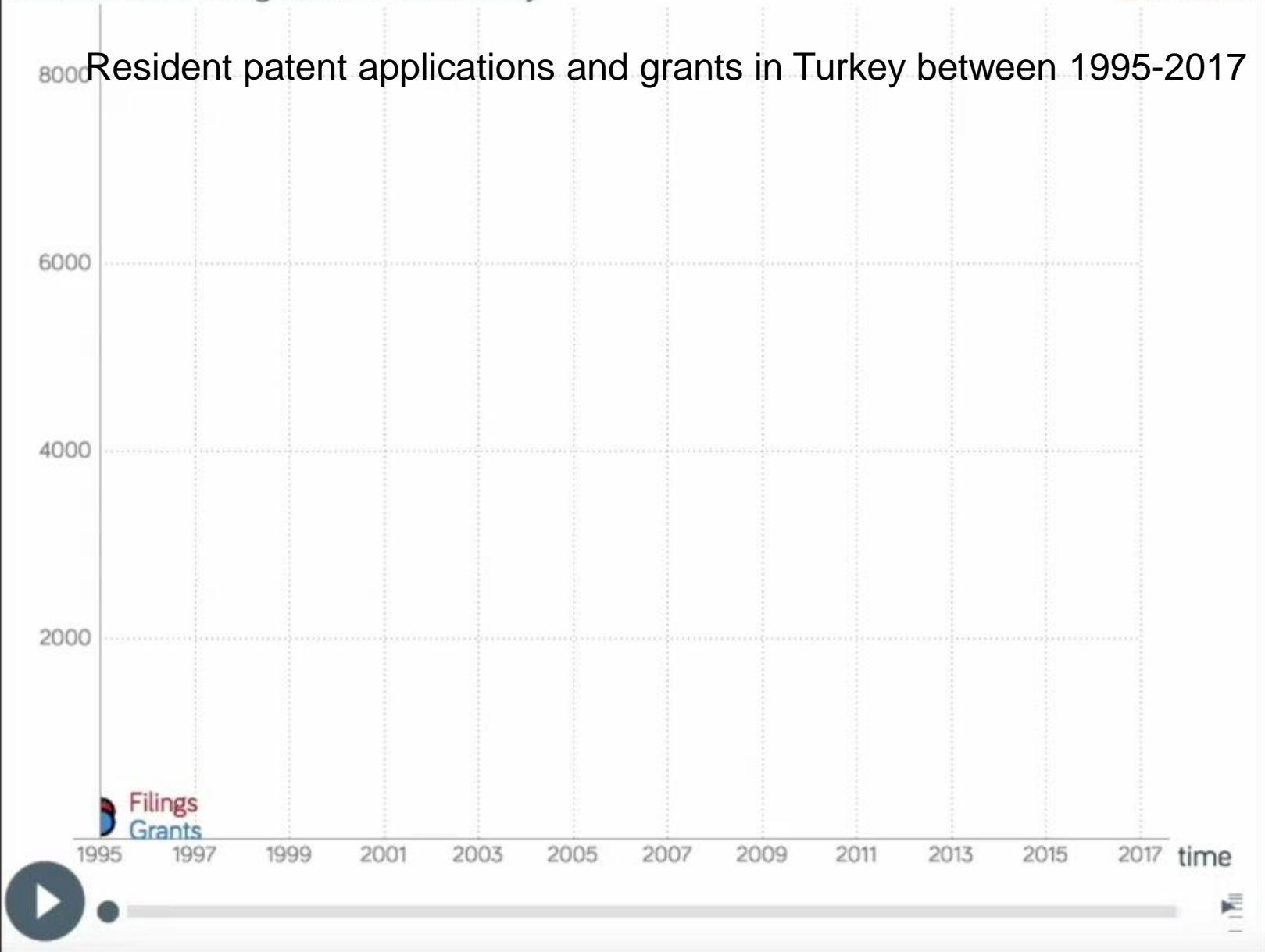
Previously,

- Director of Ege University Technology Transfer Office EBILTEM-TTO (1998-2017)
- Vice-President of Ege University Technopark Executive Board (2015-2018)
- Founding Head of Department of Bioengineering (2000-2017)
- National Coordinator for the EPO Project «*The Dissemination of IP Knowledge in Universities*» (2011-2012)

Resident patent applications between 1985-2016



Resident patent applications and grants in Turkey between 1995-2017



PATENTS...

... are one of the Innovative Outputs of Knowledge-based societies;
together with trademarks, registered designs and scientific publications as well as material transfer agreements and business method patents.

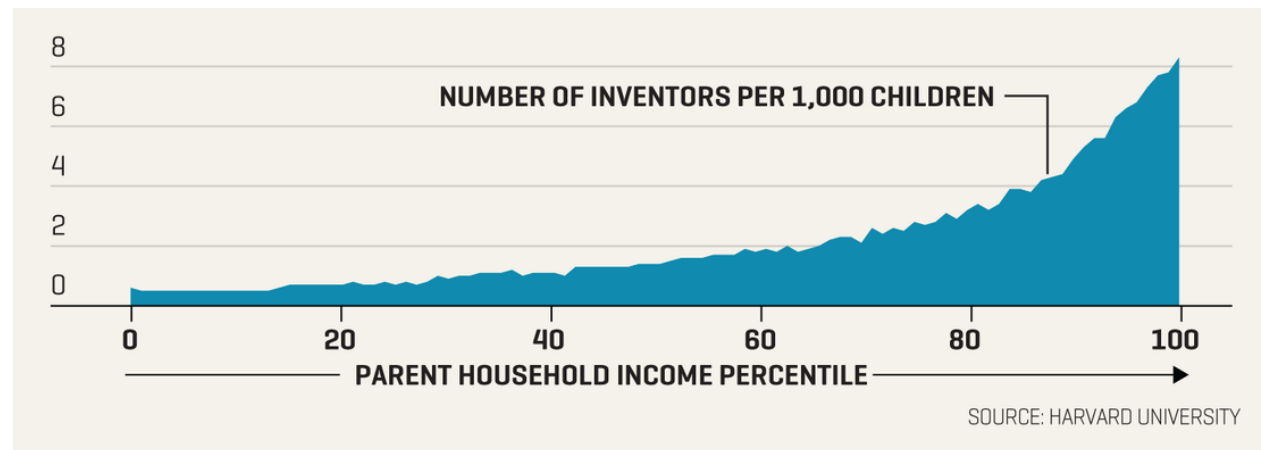
**...REQUIRE ECOSYSTEMS
FACILITATING, ENCOURAGING & AWARDING**

FREE THINKING AND CREATIVITY...

CREATIVITY vs ECONOMIC STATUS

A Study conducted by Harvard University (*WORLD ECONOMIC FORUM* - wef.ch/2Jz3SnG)

- Children from the top 1% of household incomes were found to be 10 times as likely to become inventors when they grew up as their middle- and low-income peers.
- White children were three times as likely as black children, and girls go on to hold just 18% of patents in the U.S.
- Having a mentor or a role model that's in some sense similar to you is important.”



CREATIVITY IN HIGHER EDUCATION

Creative Institutions: structures and leadership with future orientation, actively seek to influence future developments, rather than be grounded in the past or simply react to external pressures

Creative Environments:
Cities, regions, NGOs
and governments

Creative partnerships:
Diversity in HEIs and
external stakeholders

Economic/social
environment,
infrastructure
(e.g., banking,
IPRs, IT, etc.)
and legal
frameworks

Stakeholders'
demands/needs,
engagement
and
consumption
patterns

Creative learners: Innovation in teaching and learning-
human potential

HEIs

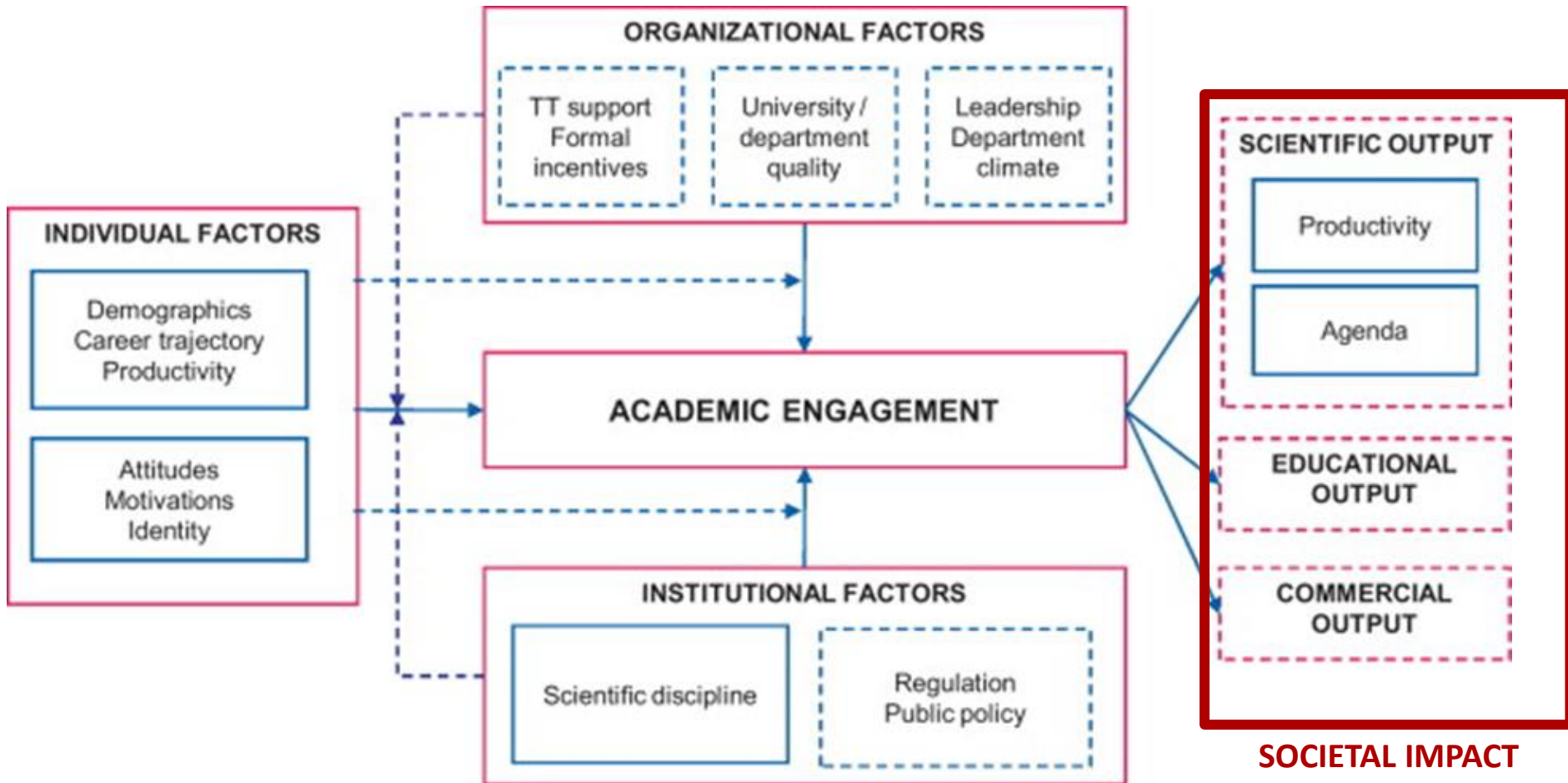
Structure and culture

Leadership

Group

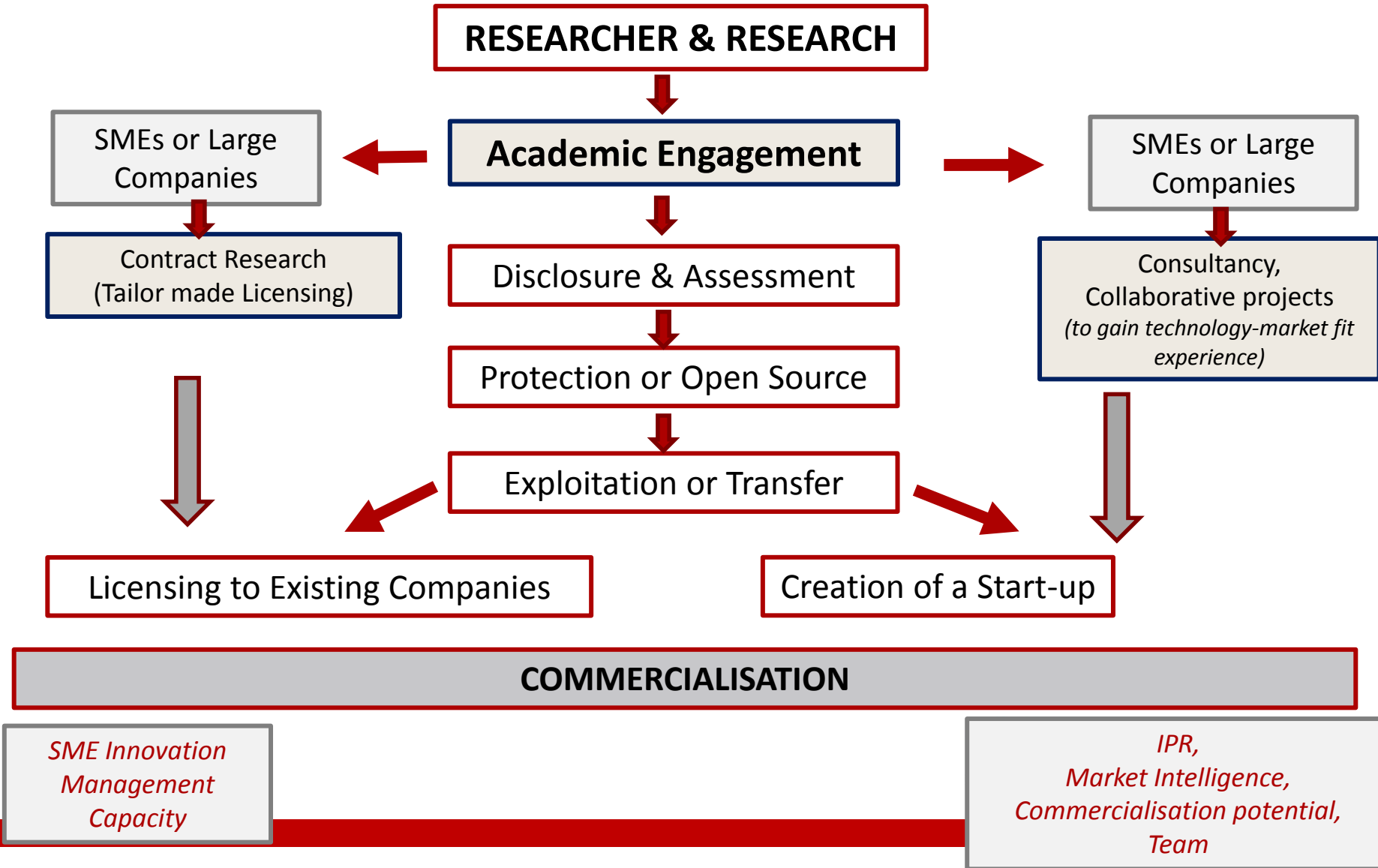
Individual

Factors for Academic Engagement



Creating a Societal Impact from Research Results-

Path from knowledge to market



Turkish Universities

Total of 204 Universities spread out to 814.578 km²

Researchers – approximately 80,000

State Universities: 60,384 (21,205 Female – 39,179 Male)

18,920 Professors, 13,091 Associate Professors , 28,373 Assistant Professors

Private Universities :12,314 (4,905 Female – 8,354 Male)

3,487 Professors, 1,927 Associate Professors , 6900 Assistant Professors

128 Patent Information Centres of TURKPATENT active - 72 at universities

INHERENT WEAKNESSES

in Turkish HE System for a Culture of Creativity

- One-size fits all concept
- Questionable institutional autonomy
- Rigid institutional structures restricting initiative taking
- Limited interdisciplinarity and institutional cooperation
- Lack of an innovation-friendly human resource policy
- Permanent positions as civil servants and promotions not strictly based on performance
- Over-extended teaching load
- Limited cross-fertilisation for research and economic output

THUS LIMITED SOCIETAL IMPACT...

Partially in an ivory tower - Need realistic projects for patents with commercial value

Need collaborations and networks to improve the R&D&I capacity and competitiveness of their clients

Universities

Academia

- Awareness
- Project Development
- Industrial Collaboration
 - Contract Research
 - IPR
 - Licensing
- Entrepreneurship

Technoparks

Technopark Companies

- Coordination and Services for R&D
- Access to Universities' Infrastructure
- Acquisitions & Mergers, Licensing

TTO's

INDEX for UNIVERSITIES

- **R&D Performance**
- **Economic Impact**
- **IPR**
- **Entrepreneurship**
- **Collaborations**

INDEX for TECHNOPARKS

- **R&D Performance**
- **Investments**
- **Exports**
- **IPR**
- **Incubator Services**
- **Collaborations**

INDEX for IND. RESEARCH CENTRES

- **R&D Performance**
- **Number of Projects**
- **IPR**
- **Collaborations**

R&D Centres

Industry

Companies

- R&D Projects
- New Technologies
- New Patents

Need new ideas and approaches and Access to basic science for development of new products and processes

Outputs of Research Results

Publications	TR	World
Top 25% Impact Journals	21 %	44%
Second 25%	22%	25%
Third 25%	23%	18%
Lowest Impact Journals 25%	32%	14%

Exports (<i>added-value</i>)	2000	2017	Difference
High	7.8 %	3.8%	-4.0%
High-Medium	20.4%	34.2%	+14.2%
Medium-Low	20.5%	28.7%	+8.2%
Low	51.3 %	33.3%	-18.0%

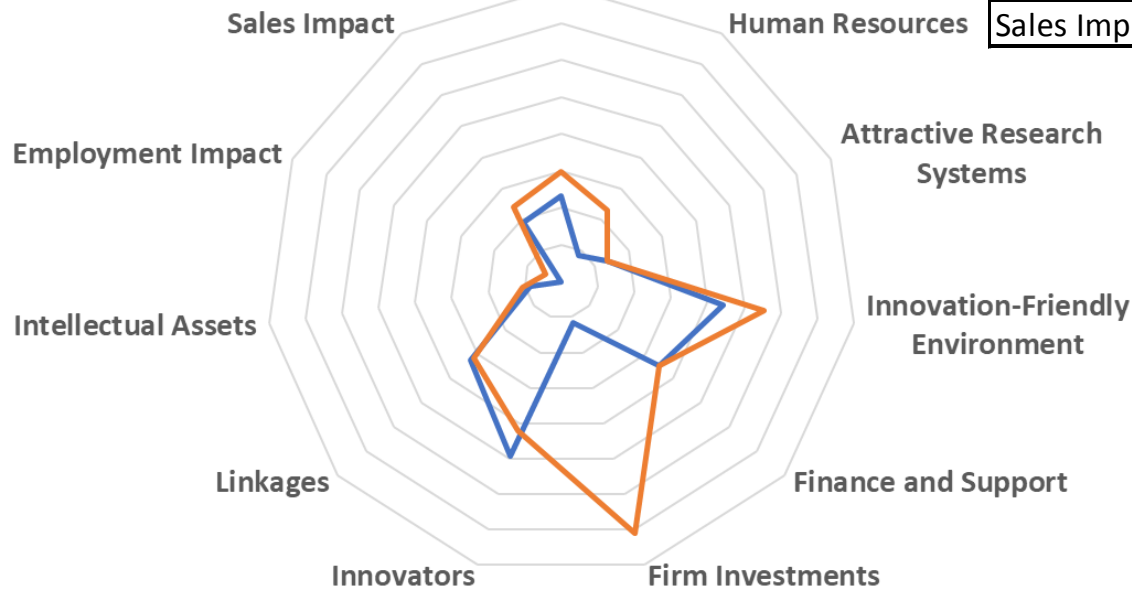
Turkey is a Moderate Innovator – performance increased by 13.2% relative that of the EU in 2010

European Innovation Scoreboard	2010	2016
Summary Innovation Index	46.5	56.7
Human Resources	16.8	45.7
Attractive Research Systems	27.3	27.2
Innovation-Friendly Environment	88.5	110.9
Finance and Support	69.9	69.9
Firm Investments	22.9	142.1
Innovators	98.4	83.9
Linkages	65.1	62.9
Intellectual Assets	17.3	21.5
Employment Impacts	0.0	9.7
Sales Impacts	38.1	47.8

Innovation Score Board for Turkey

— 2010 — 2016

Summary Innovation Index



Major Problems

- R&D Supports lacking in **thematic / sectoral / output focus**
- Input oriented R&D Support mechanisms **not measuring outputs** leading to low commercialization of R&D results,
- Insufficient Supports for **multi-disciplinary large projects** involving cross-sectoral collaborations, thus insufficient *validation* for transforming prototypes into production
- Lack of Multi-stage R&D supports with **feedback loops facilitating the reiteration** of intermediate outputs of projects
- Insufficient funds available for **mobilizing critical mass** of qualified human resources in priority areas
- Insufficient funds for **early stage start-ups** and lack of country and sector planning in international collaborations

Major Problems

- Lack of a **national R&D&I Strategy** – *no positive discrimination in R&D Supports for high technologies*
- A **knowledge asymmetry** existing between large companies and SMEs
- Not enough demand from companies for **science graduates or doctorates**

Global Trends

- **Customer or end-user oriented** R&D collaborations with special emphasis on commercialization of Research results
- Distributed production and increasing specialization amongst companies **highlighting local needs & expertise**
- High correlations between **governance of companies and R&D&I inputs**
- Support programmes for pioneering research at **frontiers of science**
- Specialised centres of excellence for clustering of **high calibre researchers**
- **Early-stage investments** coordinated by Science parks or specialised TTOs
- National sectoral focus in **Strategy Documents** leading to mega-projects
- **Pre-competitive research** encouraged within collaborative networks

How Can University Patenting Be Encouraged?

WHAT HAS BEEN DONE SO FAR?

Major Laws

4691 – Techoparks, *26 June 2001.*

5746 – Industrial R&D Centres, *12 March 2008*

6550 – Research Infrastructures, *10 July 2014*

6676 – R&D Incentives, *16 February 2016*

6769 – New IPR Law, *10 January 2017*

7033 – Production Package, *18 June 2017*

New Model for Turkey - *proposed*

Phase 1:
Collaborative Networks

Interface Supports



OUTPUTS:
Product/Theme Roadmaps
Strategic Partnerships

Phase 2:
Strategic Products

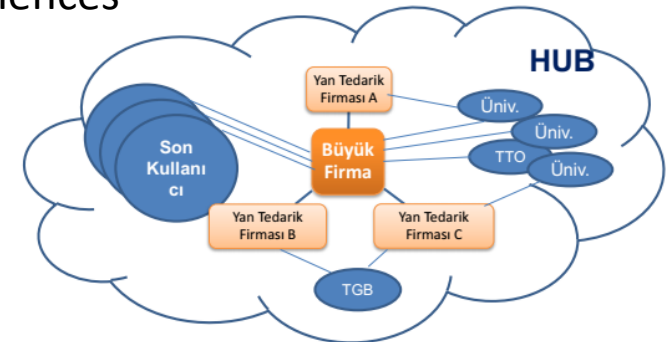
Mega R&D Supports



OUTPUTS:
Strategic Products
Strategic Technologies
Sharing Knowledge/Experiences

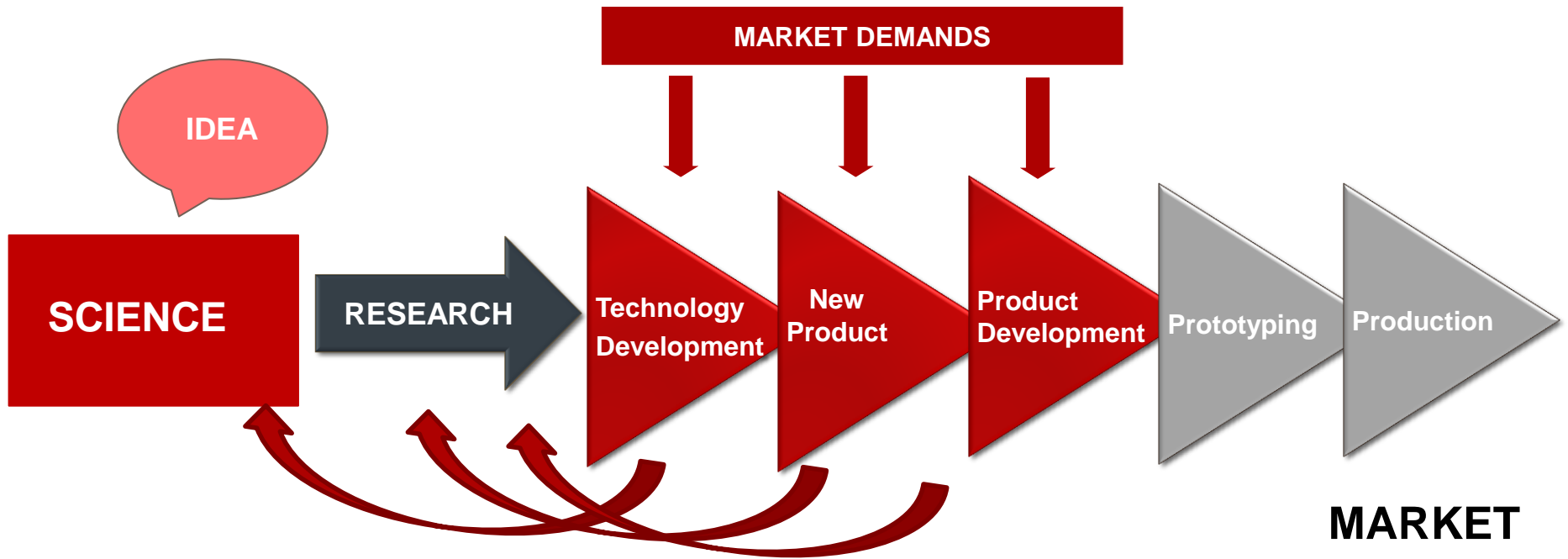
Phase 3:
Industrial Innovation
Partnerships

R&D Supports for
Networks in Priority Areas



The Approach

IDEA



Options for Universities



1

IP Commercialization

Research

Invention

Application

Development
and
Commercialization

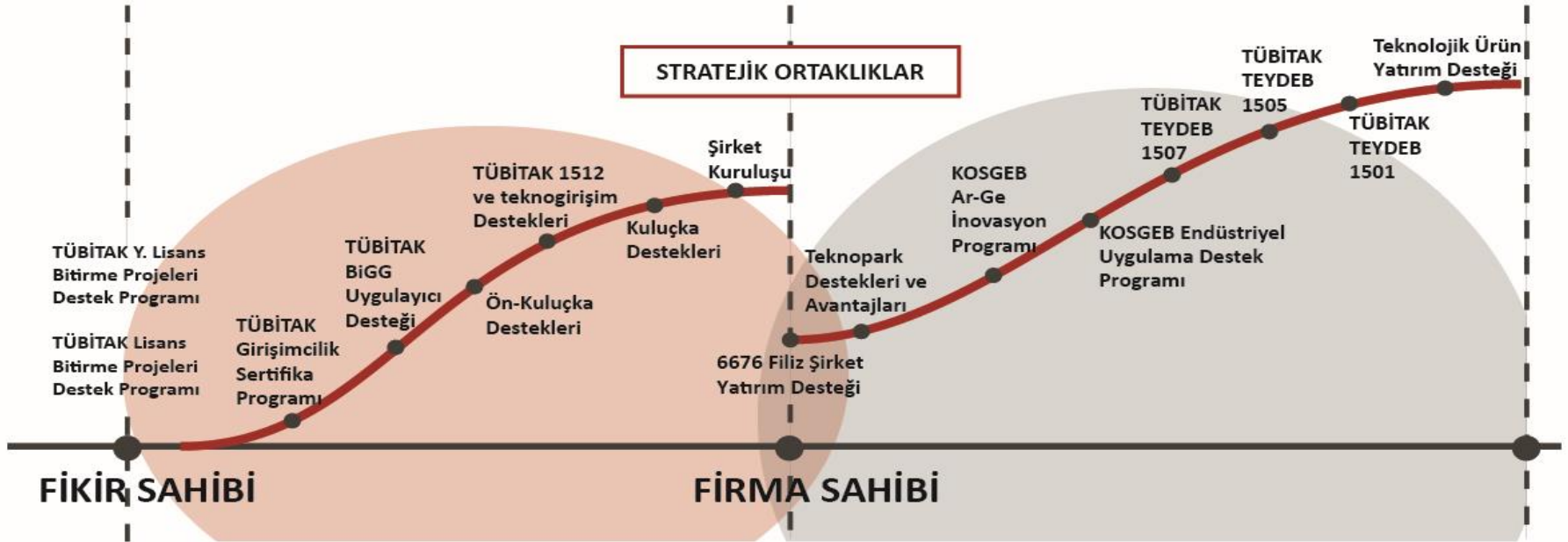
IP
Process

2

Collaborative research

Industry brings funding and «real problems» to research. Research with industrial partners solves real problems and naturally leads to licensing.

R&D SUPPORTS – Seamless Chain of Funding



Better alignment of the well-intentioned, but often separate, efforts of the many players may be necessary ...

EPO for the Project “*The Dissemination of IP Knowledge in Universities*” - March 2011- December 2012

- First initiation - 21 February 2008 EPO Roving workshop
- Implemented in cooperation with EPO, OHIM, TURKPATENT
- Goals
 - **Raising the current level of awareness and knowledge on IPR in Turkish Universities.**
 - ✓ Sharing of Best Practices, Coordination of Inter-University Communication For Building On Experiences And Supporting Excellence
 - ✓ Establishment of IPR Policy and Increasing Awareness of IPR at Universities
 - **Integration of IP courses at different levels into university curricula**
 - ✓ Short Training Modules (Certificate Programmes)
 - ✓ Multidisciplinary Advanced Programmes Leading to IP Specialists
 - **Integration of IP in knowledge transfer activities of the universities**
 - **Establishment and improvement of IP Offices and TT Offices within the universities.**
 - **Simplifying the Procedures for the Commercialization of Inventions Generated By Universities**

ACHIEVEMENTS



ESTABLISHMENT OF NETWORK

- A Steering Committee chaired by the TURKPATENT President,
- 40 members: 7 Regional Coordinators, 26 Representatives,

AWARENESS ACTIVITIES:

- Events organized at 23 different Universities.
- Presentations to University Senates, Engineering Deans' Council
- IPR awareness activities incorporated into activities organized by universities
- Free seminars and certificate programs organised by different institutions,

INSTITUTIONAL SYNERGIES CREATED:

Liaisons with *University – Industry Centers Platform (USIMP)*, *Research based Intangible Assets Platform (ARTEV)*, *Association of University Technology Managers (AUTM)*, etc

ACHIEVEMENTS-2

DUE DILIGENCE SURVEY: An on-line for *“Awareness of Industrial Property Rights (IPR) in the Turkish Universities”*

- University Rectors mobilized, the Heads of Departments completed the survey and 2985 responses were collected (82% response rate)
- A comprehensive final report was prepared in June 2012.

TEACHING:

- Over 400 Volunteers from universities as trainers were identified in 4 regions.
- Translation of EPO teaching kit was completed
- Training programmes for trainers on IPR and Technology Transfer were organised.

PATENT APPOINTMENT SYSTEM: face-to-face appointments initiated by TURKPATENT

ESTABLISHMENT OF TTOs: A TUBITAK initiated a special support program for the establishment of TTOs

UNIVERSITY IPR POLICIES: A sample document developed as a template

Improving the Ecosystem – USIMP National Patent Fair

In November each year since 2015...

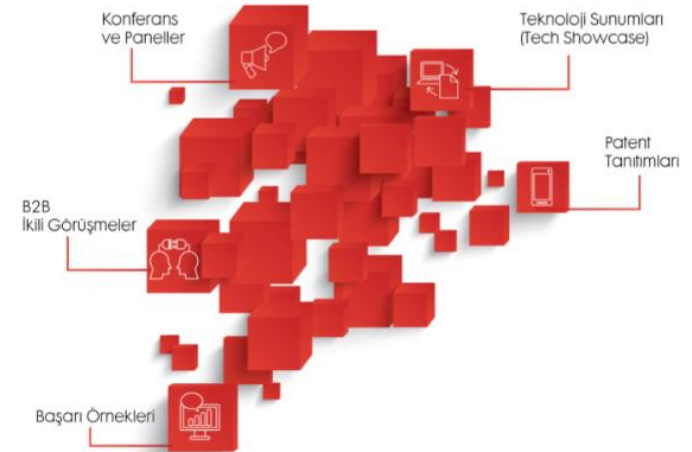
Only University originated Patents...

	2015	2016	2017
Participating TTOs and R&D Centres	17	19	23 + 5
Patents Exhibited	126	124	147
Participants	350	400	515
Participating Companies	30	76	102
B2B Meetings	5	32	75
Sponsors	11	15	6
Partners			8



ÜSİMP ULUSAL PATENT FUARI - 2018

Üniversitelerin Patentleri Sanayi ile Buluşuyor
14-15 Kasım 2018
Harbiye Askeri Müzesi, Şişli - İstanbul



/usimppatent

ÜSİMP - Üniversite Sanayi İşbirliği Merkezleri Platformu
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Initiatives from TURKPATENT

In addition to numerous awareness activities and active contributions to various events...

- **ISIF Istanbul International Inventions Fair** – *Open to all*
- **An on-line Technology Platform** – *announcing licensing opportunities*
<http://www.teknolojitransferi.gov.tr/TeknolojiTransferPlatformu/>
- **A patent Competition for University Students** – **“PATENTLE TÜRKİYE”**
– *ideas with no protection ?*
- **A Patent Valuation Platform** - *a possible conflict of interest ?*

Financial Support Programmes of TUBITAK

International Patents

- **Support for International Patent Applications** – JPO, USPTO, EPO, WIPO (PCT)
- **Search Reports** - Invention Valuation
- **Support for International Examination Reports** – provided the application is made to TPE
- **International Patent Award** – individuals, universities & companies.

National Patents for:

- Turkish Patent Attorneys / Turkish Patent Agents,
- Search & Examination reports
- Awards to patent agents & to those with patents granted

Patent Support Program - TUBITAK & TPI

signed a new protocol on February 08, 2018 to increase patenting activity in the country:

- all the **costs for international patent applications and international search reports** under PCT will be funded by TUBITAK provided that Turkish applicants select TURKPATENT as International Search Authority (ISEA) and International Examination Authority (IPEA).
- **China and South Korea has been included** among the group of countries (USA, EPO, JAPAN) where costs for patent applications filed by Turkish residents are supported.
- Funds available to **Turkish Patent Attorneys / Turkish Patent Agents** for their professional development and supporting the inventors have been increased.



Outputs of Research Results

	Rank in 2016	Number in 2016	Increase in the last 10 years
No of Publications	18	32,000	2.1%
No of Publications per Million Population	53	395	-
No of Patents	21	1012	4%
No of Patents per Million Population	40	13	-

Possible Reasons for Improvements

FIRST PHASE – *EPO initiated Awareness project*

- Increase in IPR awareness within Universities / University administrations
- Increasing effect of Patents on academic promotions New courses on IPR
- New graduate programmes on IPR
- Increase in the number of Technology Transfer Offices

SECOND PHASE – *Impact of TTO's*

- Improved quality of research outputs through the involvement of the end-users (companies)
- Increasing trends for university-corporate collaborations leading to Joint projects and joint IP.

THIRD PHASE – *New Patent Law – January 2017*

- At least 30% of royalties going inventors – royalty sharing incentives
- Increased weight of patents in academic promotions
- Commercialisation overheads- revenue creation for University administrations to be used for new inventions
- Still some complications....

Thank you

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